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Original Communications.

A REPORT ON CASES OF MEASLES.*

BY WALTER LESTER CARR, M.D.,
New York.

The patients who furnish the subject of this report were seen in the Infants' and Children's Hospitals, Randall's Island, during a service of two months, namely from February the first to March the thirty-first of this year. The total number of cases under observation was 115. There were 107 cases of rubeola and 8 cases of rubella. The number of uncomplicated cases of rubeola was 44; rubella, 6; of complicated rubeola, 62; of rubella, 3.

There were 65 boys and 50 girls. The oldest child, a boy, was sixteen years; the youngest, a boy, was five months. The average age over two years was 71 11-15 months. The average age under two years was 14 19-26 months. The average age of all cases was 45 5-14 months.

The average duration of uncomplicated cases from the prodromal symptoms to the end of desquamation was twenty-six days.

Sixty-two of the patients with rubeola had complicating diseases and 45 had the usual laryngeal and bronchial catarrh.

COMPLICATIONS.

Rubeola,	broncho-pneumonia,			6
"	"	"	enteritis,	3
"	"	"	gastro-enteritis,	1
"	"	"	pertussis,	2
"	"	"	pleurisy with effusion, acute diffuse nephritis,	1
"	"	"	pertussis, enteritis,	1
"	"	"	acute miliary tuberculosis,	1
"	"	"	general tuberculosis,	1
"	"	"	purulent synovitis of hip,	1
"	"	"	enteritis, pleurisy, effusion,	1

* Read before the American Pediatric Society, Cincinnati, June 2, 1898.

Rubeola, pertussis,	2
" " otitis, media suppur.,	3
" " corneal ulcer,	1
" " lobar pneumonia,	1
" " scarlet fever,	1
" " lobar pneumonia, varicella,	1
" bronchitis,	3
" " diphtheria,	1
" " otitis media suppur.,	1
" " " " " enlarged submaxillary gland,	1
" " abscess popliteal space,	1
" " laryngitis,	2
" otitis media suppur.,	3
" " " " enteritis,	1
" " " " tonsillitis,	1
" enteritis,	5
" entero-colitis,	1
" gastro-enteritis,	1
" lobar pneumonia,	1
" " " pleurisy, effusion,	1
" " " membranous laryngitis,	1
" general tuberculosis,	1
" nasal diphtheria (K.L.B. present),	2
" scarlet fever,	1
" varicella, membranous tonsillitis (clinical diphtheria, no K.L.B.),	1
" marked conjunctivitis,	1
" membranous tonsillitis (no K.L.B.),	1
" catarrhal laryngitis,	1
Total,	62

The prodromal period of the measles that developed in well children did not present any unusual severity and not one of the patients had convulsions. Children who were ill with other diseases, (*i.e.*, pertussis, enteritis,) had more severe initial catarrh but no higher fever than the children who were in good health at the onset of the disease.

The eruption was observed in every case where the throat was examined and was noted as present on the soft and hard palate twenty-four to forty-eight hours before the appearance of the exanthem.

When first questioned as to Koplik's symptom the members of the house staff did not note its presence and I was rather inclined to doubt that it could be always found. After a study of some of the later cases of the epidemic and a comparison of the buccal eruption of children seen in private practice, I am convinced that the "bluish-white speck in the centre of a

reddish spot" is to be regarded as a valuable sign of beginning measles.

The average duration of the uncomplicated cases from the first prodromal symptoms to the end of desquamation was twenty-six days.

The average duration of the eruption from the first appearance on the face to its last staining was noted in forty-nine cases and averaged 7.56 days.

The average duration was increased by two or three cases. In one, a baby of eleven months, a bottle-fed infant who was poorly nourished, the eruption lasted seventeen days.

A baby of eighteen months, who was ill with measles, broncho-pneumonia, pleurisy with effusion and enteritis, had an eruption that left its staining for nineteen days.

The cases where the eruption was persistent were usually those of pneumonia or a low vitality. On the other hand the eruption was recorded as of short duration in babies with broncho-pneumonia.

There was not a case with hemorrhagic measles and only one child showed any tendency to a purpuric eruption, and as this child was suffering with a suppurating hip, it may be questioned how much of the character of the eruption was due to the measles and how much to the joint disease.

Rubeola was recorded as having attacked four children four weeks after the first eruption. The eruption in the first attack had shown itself from five to seven days in each case and the eruption at the second appearance lasted from five to thirteen days. The child on whom the exanthem was slow in fading did not have any complication. The eruption, course of the disease, character and general symptomology were identical with the first attack of the measles.

As the rubeola was so prevalent in the hospitals and schools a number of children were exposed to a reinfection and it was supposed that the second attack of measles developed from such exposure.

The eruption in the rubella cases was more evanescent than in the cases where measles was diagnosed. There was in these children a slight redness of the fauces and the enanthem lasted but a short time. It was impossible to determine, with accuracy, the enlarged lymph nodes as a large proportion of the measles cases had the enlargement, and children who were not

ill were frequently suffering from the effects of catarrh and engorgement of the nodes. The rubella eruption was not noted as crescentic in its distribution and it was an irregularly diffused macular eruption with erythematous patches on the legs and arms. It gave little trouble and no constitutional symptoms or complications followed.* The temperature was low and did not go over 101½°, to 102° F.

Five children who had rubeola had afterward a rubella. In most of these latter cases the eruption was evanescent, the symptoms were slight and the systemic disturbance was not marked by any complication. One child with a severe enteritis showed a persistence of the cutaneous eruption for over a week. There was no desquamation detected.

Twelve cases were transferred to the Health Department Hospital on North Brother Island. It is interesting to record that the cases sent to the Health Department were serious and almost all of them were complicated.

3	Measles and	diphtheria,		3 recovered
2	" "	pertussis,	1 died	1 recovered
1	" "	pertussis and broncho-pneumonia, noma,	1 died	
1	" "	scarlet fever,		1 recovered
1	" "	scarlet fever, broncho-pneumonia,	1 died	
1	" "	broncho-pneumonia, enteritis,	1 died	
1	" "	broncho-pneumonia,	1 died	
1	" "	marasmus,	1 died	
1	"	uncomplicated		1 recovered
		Total,	6 died	6 recovered

The complication that existed in four of the six fatal cases was broncho-pneumonia. One child, who died, after measles had pertussis, broncho-pneumonia and stomatitis gangrenosa.

Fourteen infants and children died while in the hospital and the diseases of which they died may be classified as follows:

Broncho-pneumonia,	suppurating hip,	1
" "	suppurating pleurisy,	1
" "	tuberculosis, meningitis, ileo-colitis,	1
" "	miliary tuberculosis, enteritis,	1
" "	rhachitis,	1
" "	chronic tuberculosis,	1
" "	pleurisy, sero-purulent, acute diffuse nephritis,	1
" "	gastro-enteritis, rhachitis,	1

*One child of six years had lobar pneumonia three weeks after the rubella. The pneumonia was ushered in with a chill and high temperature. It terminated by crisis on the seventh day. The pneumonia was limited to the middle of the left lung.

TABLE SHOWING THE COURSE OF THE DISEASE IN 107 CASES OF RUBEOLA.

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
S. P.	16 mos.	F.	Regular	3–24	3–29	3–30	Broncho-pneumonia.	Fair. Well developed.	Died.
A. A.	19 mos.	M.	Regular	3–7	3–10	3–19	Bron.-pneu. Enteritis.	Poorly nourished. Rachitis.	Recovered.
M. L.	10 mos.	F.	Breast	3–24	3–25	3–31	None.	Very good. Well developed.	Recovered.
C. H.	12 mos.	M.	Breast	3–12	3–13	3–20	None.	Poor. Hydrocephalic.	Recovered.
R. M.	9 mos.	F.	Wet Nurse	3–14	3–15	3–20	Gastro-enteritis.	Poor. Poorly developed.	Died.
J. F.	12 mos.	M.	Regular	3–9	3–11	3–15	Tuberculosis (?)	Poor. Poorly developed.	Recovered.
E. L.	9 mos.	F.	Wet Nurse	3–18	3–19	3–20	Broncho-pneumonia.	Poor. Markedly rachitical.	Recovered.
K. G.	11 mos.	F.	Bottle	3–9	3–10	3–27	2d rash (rubella).	Poor. Poorly developed.	Died.
E. W.	20 mos.	F.	Regular	3–31	4–3	4–10	None.	Good. Well developed.	Recovered.
C. S.	8 mos.	F.	Bottle	2–19	2–21	——	None.	Marked rachitis (negro).	Recovered.
N. B.	23 mos.	M.	Bottle	3–4	3–6	——	None.	Very poor. Chr. meningitis.	Recovered.
F. S.	12 mos.	M.	Bottle	3–2	3–4	3–12	Enteritis, Otitis Med. Sup.	Very poor. Poorly developed.	Recovered.
B. G.	24 mos.	F.	Regular	3–8	3–9	3–14	Bronchitis.	Good. Well developed.	Recovered. Sent to N.B.I.
L. S.	23 mos.	M.	Regular	3–22	3–24	——	K.L.B. in nose.	Good. Well developed.	Recovered.
R. R.	13 mos.	M.	Bottle	3–8	3–11	——	Broncho-pneumonia.	Poor. Flabby. Anæmic.	Died.
P. B.	7 mos.	M.	Wet Nurse	2–26	2–28	3–18	Bron-pneu. 2d rash (rubella), 3–12	Poorly developed. Rachitis.	Died.
E. V.	10 mos.	F.	Regular	3–23	3–25	——	Bron-pneu. gastro-enteritis.	Poor. Rachitical.	Died.
J. E.	11 mos.	M.	Breast	3–27	3–30	——	Bron-pneu. (intense congestion).	Poor. Fair development.	Recovered.
J. G.	5 mos.	M.	Regular	3–7	3–9	3–16	Pertussis. Corneal ulcer.	Good. Well developed.	Recovered.
W. S.	3½ yrs.	M.	Regular	3–5	3–9	3–14	Pertussis.	Good. Well developed.	Recovered.
J. S.	4 yrs.	M.	Regular	3–6	3–8	3–14	Pertussis, Otitis Med. Sup.	Poor. Well developed.	Recovered.
J. L.	2½ yrs.	M.	Regular	3–13	3–15	3–20	Pertussis. Lobar pneu.	Fair. Well developed.	Recovered.
H. T.	24 mos.	M.	Regular	3–8	3–9	3–11	Pertussis, Otitis Med. Sup.	Poor. Tuberc. rt. hip.	Recovered.
F. de N.	20 mos.	M.	Regular	3–15	3–19	3–24	Lobar pneumonia.	Fair. Marked rachitis.	Died.
B. C.	2½ yrs.	F.	Regular	2–23	2–28	3–7	Pertussis, Bron-pneu.	Fair. Well developed.	Died.
C. A.	2½ yrs.	M.	Regular	2–13	2–14	2–22	Pertussis, Lobar pneu. Varicella.	Poor. Well developed.	Died.
I. L.	3½ yrs.	F.	Regular	3–2	3–5	——	Pertussis. Scarlet fever.	Good. Well developed.	Sent to N.B.I. Recovered.

TABLE SHOWING THE COURSE OF THE DISEASE IN 107 CASES OF RUBEOLA—*Continued.*

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
M. S.	27 mos.	F.	Regular	3–29	3–31	——	Pertussis, Broncho-pneumonia. Noma.	Good	Sent to N.B.I. Died.
F. F.	22 mos.	M.	Regular	3–31	4–1	——	None.	Fair.	Recovered
M. C.	21 mos.	F.	Regular	3–30	4–1	——	Broncho-pneumonia, Pertussis.	Fair.	Sent to N.B.I. Recovered.
E. L.	8 mos.	M.	Breast	3–22	3–23	——	Pertussis, Otitis Media.	Good.	Sent to N.B.I. Recovered.
I. C.	22 mos.	F.	Regular	3–9	3–11	3–18	Bronchitis, Diphtheria.	Good. Well developed.	Sent to N.B.I. Recovered.
S. T.	1 yr.	M	Regular	——	——	——	Scarlet-fever, Broncho-pneu.	Fair.	Sent to N.B.I. Died.
L. S.	16 mos.	F.	Regular	3–23	3–24	——	K. L. B. in nose.	Good.	Sent to N.B.I. Recovered.
J. Q.	12 mos.	F.	Breast	2–24	2–27	3–6	Otitis Media.	Good.	Recovered.
H. N.	23 mos.	M.	Regular	3–22	3–26	4–2	Clin. Symp. of Diph., no K.L.B., Varicella, Pseudo-mem. on tonsils.	Fair.	Recovered.
C. T.	25 mos.	F.	Regular	3–27	3–29	4–3	None.	Good.	Recovered.
F. H.	2 yrs.	M.	Regular	2–5	2–8	2–14	Bronchitis, Otitis Media.	Poor. Scurvy.	Recovered.
J. G.	10 mos.	F.	Bottle	2–10	2–14	2–20	Otitis Media.	Good.	Recovered.
M. Z.	7 yrs.	F.	Regular	2–8	2–10	2–20	Laryngitis, Bronchitis.	Good.	Recovered.
A. G.	7 yrs.	M.	Regular	2–11	2–13	2–19	Marked Conjunctivitis.	Good.	Recovered.
T. L.	7 mos.	M.	Bottle	3–20	3–22	——	None.	Poor. Hereditary Syphilis	Recovered.
C. P.	2½ yrs.	M.	Regular	2–15	2–17	3–1	Enteritis.	Very poor.	Recovered.
M. G.	4½ yrs.	F.	Regular	2–28	3–1	3–11	None.	Good.	Recovered.
J. B.	10 yrs	M.	Regular	1–28	1–28	2–8	None.	Good.	Recovered.
M. G.	6 yrs.	M.	Regular	1–20	2–31	3–10	Bronchitis.	Good. Nystagmus.	Recovered.
M. McC.	10 yrs.	F.	Regular	2–7	2–10	2–20	None.	Good.	Recovered.

TABLE SHOWING THE COURSE OF THE DISEASE IN 107 CASES OF RUBEOLA—*Continued.*

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
B. C.	8 yrs.	F.	Regular	2–2	2–3	?	None.	Good.	Recovered.
M. C.	10 mos.	F.	Breast	2–10	2–16	2–21	Broncho-Pneumonia, Enteritis.	Poor.	Died.
O. G.	12 yrs.	F.	Regular	2–3	2–6	2–13	None.	Good.	Recovered.
J. W.	4 yrs.	M.	Regular	2–10	2–12	2–18	None.	Good.	Recovered.
G. B.	16 mos.	M.	Regular	3–10	3–14	3–27	Bronchitis, Otitis Med. Sup., Enlarged Submaxillary Glands.	Fair.	Recovered.
J. M.	18 mos.	M.	Regular	3–10	3–12	3–19	Membranous Tonsillitis 4 days. Culture negative.	Fair.	Recovered.
H. B.	2 yrs.	M.	Regular	3–16	3–18	——	Lobar pneu., mem. laryngitis.	Poor.	Died.
M. K.		F.		?	2–12	?	None.	Good.	Recovered.
G. W.	4 yrs.	M.	Regular	?	2–7	?	None.	Good.	Recovered.
H. F.	4 yr. 9 mo	M.	Regular	?	2–23	2–29	None.	Good.	Recovered.
F. McI.	2 yrs.	M.	Regular	2–23	2–28	3–7	None.	Fair.	Recovered.
W. W.	10 y. 6 mo	M.	Regular	1–28	1–30	2–8	None.	Good.	Recovered.
E. B.	6 yrs.	M.	Regular	2–8	2–10	2–19	2d rash (rubella), 3–25. 2d rash disappeared, 3–29. Bronchitis.	Good.	Recovered.
M. S.	4 yr. 3 mo	M.	Regular	2–8	2–10	2–27	None.	Good.	Recovered.
M. L.	13 y. 6 mo	F.	Regular	2–2	2–3	?	None.	Good.	Recovered.
B. C.	14 yrs.	F.	Regular	?	?	?	None.	Good.	Recovered.
F. K.	8 yr. 9 mo	F.	Regular	?	?	?	None.	Good.	Recovered.
J. R.	?	F.	Regular	?	2–30	?	None.	Good.	Recovered.
L. C.	9 yrs.	F.	Regular	?	3–3	?	None.	Good.	Recovered.
E. B.	6½ yrs.	F.	Regular	?	3–2	3–7	None.	Good.	Recovered.
M. S.	2 yr. 1 mo	F.	Regular	3–5	3–10	3–12	Bronchitis.	Good.	Recovered.
H. H.	23 mos.	M.	Regular	2–23	2–25	3–6	Broncho-pneumonia.	Good.	Recovered.
K. G.	2 yr. 9 mo	F.	Regular	3–3	3–10	3–16	Otitis Med. Sup. Tonsillitis.	Poor. Tuberculous.	Recovered.

NOTE.—Cases marked ? had their records kept but they were destroyed by mistake during fumigation of the hospital pavilions and the notes could not be completed.

TABLE SHOWING THE COURSE OF THE DISEASE IN 107 CASES OF RUBEOLA—*Continued.*

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
M. C. O'C.	1 yr. 3 mo.	F.	Regular	2–3	2–6	?	Bron.-pneumonia. Pleurisy. Effusion. Acute diffuse nephritis.	Poor. Very Anæmic.	Died.
I. R.	9 yrs.	M.	Regular	2–16	2–18	?	None.	Good.	Recovered.
M. B.	8 yr. 9 mo.	M.	Regular	?	?	?	None.	Good.	Recovered.
I. T.	2 yr. 1 mo.	M.	Regular	?	3–28	4–1	Gastro-enteritis. Broncho-pneumonia. Pleurisy.	Poor.	Sent to N.B.I. Died.
F. M.	1 yr.	M.	Breast	3–24	3–26	——	Broncho-pneumonia. Pertussis.	Good.	Sent to N.B.I. Died.
W. M.	4 mos.	M.	Breast	3–16	3–17	3–30	Bron.-pneumonia. Enteritis.	Poor.	Sent to N.B.I. Died.
C. D.	2 yr. 2 mo.	F.	Regular	3–16	3–25	3–31	Catarrhal laryngitis.	Good.	Recovered.
M. L.	1 yr. 6 mo.	F.	Regular	2–1	2–3	?	None.	Good.	Recovered.
M. S.	1 yr. 2 mo.	M.	Regular	2–22	2–26	3–1	None.	Good.	Recovered.
L. L.	6 mos.	F.	Bottle	2–14	2–17	2–25	Marasmus. Enteritis.	Amaurotic fam. Idiocy.	Recovered.
M. C.	8 mos.	F.	Breast	2–15	2–17	?	Broncho-pneumonia.	Fair.	Recovered.
H. B.	11 mos.	M.	Wet Nurse	2–16	2–17	2–19	Bron-pneumonia. Enteritis. Acute miliary tuberculosis.	Poor. Undersized. Anæmic.	Died.
F. S.	4 yr. 2 mo.	F.	Regular	3–1	3–4	3–12	Entero-Colitis.	Fair.	Recovered.
W. M.	4 yr. 4 mo.	M.	Regular				None.	Fair. Rachitis.	Recovered.
P. C.	3 yrs.	M.	Regular	3–30	4–2	?	Bronchitis. Ac. croupous laryn.	Fair.	Recovered.
H. A.	4 yr. 3 mo.	M.	Regular	2–14	2–16	2–22	2d rash (of rubeola), appeared, 3–13, disappeared, 3–18. Bronchitis. Abscess of popliteal space.	Fair. Rachitical.	Recovered.
H. W.	3½ yrs.	M.	Regular	3–3	3–5	3–11	2d rash (rubeola), appeared 4–4. None.	Good.	Recovered.
R. B.	4 yrs.	F.	Regular	?	2–1	2–8	2d rash (rubella), 3–2. 2d rash disappeared 3–5. None.	Good.	Recovered.

TABLE SHOWING THE COURSE OF THE DISEASE IN 107 CASES OF RUBEOLA—*Continued.*

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
J. B.	11 yrs.	M.	Regular	3–1	3–4	3–9	2d rash (rubella), 3–23. 2d rash disappeared 4–3. Marked enteritis with rubella.	Good.	Recovered.
C. B.	4 yr. 11 mo	M.	Regular	?	2–10	2–17	2d rash (rubeola), appeared 3–10. 2d rash disappeared 3–22.	Good.	Recovered.
S. G.	2 yr. 4 mo	M.	Regular	?	3–13	3–20	Otitis media suppur. 2d rash (rubella), appeared 4–2. None.	Good.	Recovered.
A. D.	6 yrs.	F.	Regular	?	3–22	3–20	None.	Good.	Recovered.
S. C.	6 yrs.	F.	Regular	?	?	?	None.	Good.	Recovered.
M. W.	6 yr. 2 mo	M.	Regular	3–5	3–7	3–14	None.	Good.	Recovered.
T. T.	8 yrs.	M.	Regular	3–4	3–5	?	None.	Good.	Recovered.
W. H.	5 yr. 7 mo	M.	Regular	3–2	3–5	3–10	2d rash (rubeola), appeared 3–19. 2d rash disappeared 4–2. None.	Good.	Recovered.
W. H.	6 mo.	M.	Bottle	2–?	?	?	Broncho-pneumonia.	Fair.	Sent to N.B.I. Died.
J. D.	8 yrs.	M.	Regular	3–24	3–27	?	None.	Good.	Recovered.
T. T.	7 yrs.	M.	Regular	?	?	?	None.	Good.	Recovered.
L. M. C.	5 yrs.	F.	Regular	3–1	3–2	3–12	None.	Pott's disease.	Recovered.
J. F.	18 mo.	M.	Regular	2–8	2–17	3–8	Bron.-pneu. Pleurisy with effusion. Enteritis.	Poor. Thin. Not well nourished.	Recovered.
N. J.	1 yr.	M.	Breast	?	2–14	?	Enteritis.	Very poor. Negro. Marked rachitis.	Recovered.
J. E.	8 mos.	M.	Breast	?	2–25	3–7	Enteritis.	Fair.	Recovered.
R. D.	19 mos.	F.	Regular	3–10	3–13	3–23	Bron.-pneu. Enteritis.	Poor. Rachitis.	Recovered.
L. K.	18 mos.	F.	Regular	2–23	2–24	3–5	Bron.-pneu. General tuberculosis	Fair.	Died.
M. R.	15 mos.	F.	Bottle	3–1	3–3	3–6	Bron.-pneu. Purulent synovitis of hip.	Fair.	Died.
A. B.	12 yrs.	M.	Regular	2–12	2–15	?	None.	Good. Epileptic.	Recovered.

TABLE SHOWING THE COURSE OF THE DISEASE IN 8 CASES OF PRIMARY RUBELLA.

NAME	AGE	SEX	DIET	Month and Day of Invasion	Appearance of Rash	Disappearance of Rash	COMPLICATIONS	GENERAL CONDITION	RESULT
F. L.	10 yrs.	F.	Regular	?	?	?	None.	Good.	Recovered.
T. G.	6 yrs.	M.	Regular	3–24	3–26	3–30	None.	Good.	Recovered.
W. B.	3 yr. 5 mo.	M.	Regular	3–27	3–30	——	None.	Fair. Pott's disease.	Recovered.
L. H.	8 yr. 2 mo.	F.	Regular	3–21	3–24	3–28	Acute tonsillitis.	Good.	Recovered.
G. M.	4 yr. 7 mo.	M.	Regular	?	3–30	4–2	None.	Fair.	Recovered.
L. P.	4 yr. 3 mo.	F.	Regular	?	3–18	?	None.	Good.	Recovered.
J. P.	4 yrs.	M.	Regular	3–4	3–6	?	None.	Good.	Recovered.
F. H.	6 yrs.	F.	Regular	3–26	3–28	3–31	Lobar pneumonia.	Good.	Recovered.

Lobar pneumonia, pertussis, and varicella,	1
" " very rhachitic,	1
" " membranous laryngitis. Very poor condition,	1
Gastro-enteritis and general rhachitic condition,	1
Chronic meningitis and marasmus,	1
General miliary tuberculosis,	1
	14

The pneumonia in three of the patients was probably a mixed infection. The symptomatology and physical signs were those of an acute lobar pneumonia. The onset was sudden, the area of inflammation was localized and distinct with the temperature range incident to a lobar pneumonia but the resolution was slow and unsatisfactory and all of the cases succumbed. One of these patients had a pleurisy with effusion. It is unfortunate that autopsies were not allowed.

POST-MORTEM examinations were made as follows:

AUTOPSY No. 1. Richard Roche, aet. one year. Body fairly well nourished.

LUNGS.—Right pleural cavity contains one-half ounce of thick yellowish-green fibrinous pus, coating the lung, costal pleura and diaphragm. Left cavity normal. Right lung; lower lobe almost solid, broncho-pneumonia, sub-pleural abscess size of a small pea; middle lobe, partly aerated, posteriorly a cavity with softened, gangrenous walls, cavity without any pus and not opening externally. Upper lobe shows areas of pus infiltration, intense bronchitis, congestion and œdema. Left lung; lower lobe posteriorly shows areas of consolidation, congestion and œdema.

SPLEEN.—Congested.

LIVER.—Fatty.

KIDNEYS.—Markings pale, cortex thin, capsule free.

STOMACH.—Normal.

INTESTINES.—Not examined.

AUTOPSY No. 2.—Pincus Brown, aet. eight months and fourteen days. Autopsy by Dr. Wollstein. Body, badly nourished, no skin lesions.

LUNGS.—No pleurisy; right lung intensely congested, at apex small area recent broncho-pneumonia, rest of lung well aerated, base congested and œdematous. Left lung; œdema and congestion of upper lobe, strip of broncho-pneumonia along posterior border lower lobe.

HEART.—Normal, foramen ovale closed; other organs normal.

AUTOPSY No. 3.—Harry Bliss, aet. nine months. (Wet nursed by mother of Mary Constable.) Autopsy by Dr. Wollstein. Body fairly well nourished.

BRAIN.—Pia cloudy and slightly thickened over cortex, most marked over base, tubercles along vessels, some at cortex, new tubercles in island of Reil and inter-peduncular space both sides.

LUNGS.—Recent fibrous pleurisy over right lower lobe posteriorly and between the lobes of the right lung; recent miliary tubercles on the surface of both lungs, most marked in lower lobe, large area of cheesy pneumonia in same lobe; left lower lobe atelectatic; bronchial lymph nodes large and cheesy, especially on right side.

SPLEEN. Enlarged, miliary tubercles on surface and in substance.

LIVER.—Tubercles throughout.

KIDNEYS.—One tubercle in cortex of right kidney, markings distinct; supra-renal capsules normal.

STOMACH.—*Post-mortem* softening of cardiac end and the surrounding area.

INTESTINES.—Colon, enlarged solitary follicles, congested near ileo-cæcal valve, a few young ulcers; ileum, Peyer's patches swollen and congested; jejunum four or five round tubercular ulcers.

MESENTERIC LYMPH nodes are swollen and contain tubercles.

PANCREAS, normal.

Acute general miliary tuberculosis.

AUTOPSY No. 4.—Mary C. O'Conner, aet. thirteen months. Body well nourished. No lesions of skin. *Post-mortem* ecchymoses.

LUNGS.—About eight ounces of sero-purulent fluid in left pleural cavity. Fibrinous and purulent exudate over pulmonary and costal pleura. Lower lobe of left lung solidified, bronchopneumonia with purulent infiltration; upper lobe consolidated in areas.

RIGHT LUNG.—Pleural cavity contains two ounces of clear serum. There is no pneumonia but intense congestion. Emphysema anteriorly.

HEART.—Normal.

SPLEEN.—Large, firm and congested.

LIVER.—Congested.

STOMACH.—A little congested around œsophageal end, very thick mucus over walls.

INTESTINES.—Not examined except the colon which is normal except for hyperplasia of follicles.

KIDNEYS.—Large and pale, capsules free. Markings very indistinct, cortex thinner than normal, exudative nephritis.

POST-MORTEM DIAGNOSIS.—Broncho-pneumonia with purulent infiltration, emphysema, pleurisy, acute diffuse nephritis.

AUTOPSY No. 5.—Lillie Kenny, aet. eighteen months. Body fairly well nourished with *post-mortem* ecchymoses.

THORAX.—Pleuræ, no adhesions, no fluid.

LUNGS.—Left, upper lobe emphysematous and congested, small areas of atelectasis; lower lobe almost solid, broncho-pneumonia, pus in bronchi, softened in places, some small cheesy tubercles. Right upper lobe solid, broncho-pneumonia with purulent infiltration; middle lobe emphysematous anteriorly, few tubercles; lower lobe consolidated, large tubercles, cheesy on section, superficial atelectasis of diaphragmatic surface.

HEART.—Right border extends almost to mid-clavicular line, apex in the fifth space on the mid-axillary line. Pericardium normal, fluid a little increased. Structure of heart normal, foramen ovale closed.

LIVER.—Pale, no tubercles.

SPLEEN.—Normal, no tubercles.

STOMACH.—Normal but apparently enlarged, greatest length six inches, breadth four and one-half inches.

INTESTINES.—Normal.

KIDNEYS.—Normal, but congested, capsule free.

POST-MORTEM DIAGNOSIS.—Broncho-pneumonia with purulent infiltration, tuberculosis.

AUTOPSY No. 6.—Marguerite Rodriquez, aet. fifteen months. Autopsy by Dr. Wollstein.

LUNGS.—Left area of old pleural thickening at base, no recent pleurisy, thickening of bronchial walls, intense congestion and œdema, posteriorly a small area of consolidation, upper lobe well aerated. Right upper lobe well aerated; lower lobe, emphysematous anteriorly, some œdema and congestion.

HEART.—Normal, foramen oval closed.

SPLEEN.—Large, soft, some perisplenitis.

LIVER.—Large, moderately fatty.

KIDNEYS.—Pale, markings indistinct, cortex not thickened.

STOMACH.—Normal.

INTESTINES—Colon, solitary follicles enlarged, no ulcers in ileum, Peyer's patches slightly hyperplastic, no ulceration.

PANCREAS.—Normal.

LYMPH NODES.—Mesenteric normal. One bronchial lymph node on right side is enlarged and shows small yellow tubercles but no breaking down.

HIP JOINTS.—Left side normal. Right hip joint contains several drachms of yellow, rather thick pus. The abscess has not burrowed outside of joint. Acetabulum and head of femur covered with pus but not eroded.

BRAIN.—Pia mater cloudy at base, but otherwise normal.

AUTOPSY No. 7.—Mary Constable, aet. eight months. Body fat, well nourished.

LUNGS.—Right, few pleural adhesions, new process, about two drachms purulent white fluid on diaphragmatic surface. Left, two drachms of bloody serum in pleural sac. Right lung, upper lobe emphysematous anteriorly with translucent tubercles scattered over pleura and in its structure, a few cheesy small nodules show on section, tubercles all through lobe which is congested; middle lobe congested, tubercular and emphysematous, lower and anterior portion atelectatic; lower lobe consolidated posteriorly with broncho-pneumonia, posteriorly a small cheesy cavity the size of a hazel nut opens into a bronchus. Left lung, emphysematous and congested with scattered translucent tubercles; posteriorly the lower lobe shows broncho-pneumonia.

HEART.—Right auricle engorged and dilated, contains pale blood clot, foramen ovale a pin-point opening, fine tubercles on pericardium, valves normal, muscle pale.

LIVER.—Extremely fatty, no tubercles seen.

SPLEEN.—Enlarged, small tubercles on surface and scattered through it.

STOMACH.—Normal.

KIDNEYS.—Cloudy swelling, capsule free, contex not thickened; right supra-renal capsule has a small cavity in centre with few small tubercles.

INTESTINES.—Ileum normal to two inches above ileo-cæcal valve where there is a pseudo-membrane extending through

to colon, follicles thickened and show commencing loss of substance. Colon, mucous membrane thickened and covered with a pseudo-membrane.

MESENTERIC LYMPH NODES are enlarged, pale on section but not cheesy. Bronchial and mediastinal lymph nodes enlarged, pale and cheesy, but not broken down.

BRAIN.—Pale, pia mater glistening, some fibrinous exudate beneath pia over brain cortex but no tubercles to be seen except a few along the blood-vessels on inner and upper surface of left hemisphere. Choridal plexus normal.

Thanks are due to Drs. E. Sturgis, E. Bulkley, and F. O'Neil of the Staff for their care of the patients, and for the figures given in this report. Dr. E. G. Bryant of the Health Department, kindly furnished the statistics of the children transferred to the Health Department.

68 WEST FIFTY-FIRST STREET.

Renal Sarcoma in Children.—Concetti (*Rif. Med.*) reports three cases of this disease, two of which were operated upon, and one was alive and well two years after the operation. Early infancy (from birth to five years) furnishes the largest proportion of cases, and 20 per cent. of the recorded cases occurred within the first year. The male sex is more often affected. In the author's two cases no evidence of supra-renal tissue could be found, no glycogen, and no parasitic blastomycete such as has been described by Sanfelice. The immense majority of renal malignant growth in children are sarcomatous or myxosarcomatous in nature. In the author's cases the weights of the growths were 970 and 1080 g. respectively; one weighing 15,000 g. has been described by Vander Byl. The right kidney is more often affected than the left. The chief symptoms are the presence of a tumor behind the colon, rapidly growing, more or less free according to the presence or absence of adhesions; if cysts develop, examination of the fluid is a help in diagnosis. Examination of the urine gives negative or uncertain results; hæmaturia is exceptional. The average duration of life is only six months if the case is left alone. From published statistics the author finds that the mortality from operation is 40 per cent.; by relapse 45 per cent.; cures more than two years' duration 7 per cent.; results unknown 8 per cent. Not more than nine or ten cases of absolute cure after operation are known at present. In spite of these figures the author recommends nephrectomy if there are no signs of systemic infection.—*British Medical Journal.*

TERATOMA OF SACRUM AND COCCYX.*

BY FRANCIS HUBER, M.D.,

New York.

In the transactions of this Society for 1892, I reported a case of sacro-coccygeal tumor in a child three weeks old; operation; recovery.

These cases appear to be as rare as they are interesting, and I am rather fortunate in being able to add another operated upon on the thirty-fourth day after birth, with recovery. The careful and thorough microscopic examination of the growth by the accomplished microscopist and pathologist, Dr. James Ewing, assistant in the Pathological Laboratory of the Medical Department of Columbia University, lends additional interest and importance to the case.

A proud nurse carrying an infant but a few hours old, attended by a consequential interpreter, with the abashed father in the background, formed an interesting tableau in the reception room of the Children's Department at the Vanderbilt Clinic. In answer to my questions as to the nature of the trouble, the only response I could get was—"Want him cut off!" The newly born infant, dressed in the regulation Italian style, was ordered to be stripped, and after some little delay, the reason for the reply, "Want him cut off!" was apparent—a congenital sacro-coccygeal tumor was disclosed.

The general characteristics of the growth are very well shown in the accompanying photographs. The child otherwise was well nourished and in good condition; no club-foot or interference with the development of the lower extremities. The growth involved the sacral and coccygeal regions, was centrally situated, the greater part of the mass, however, being to the left of the median line. Length posteriorly was four and one-half inches; anteriorily, two and three-quarter inches; slight constriction at base; diameter at this point, one, one-half and two inches; of tumor proper, two and three-quarter inches.

Digital examination failed to show any malformation of the anus or rectum, the rest of the intestinal tract evidently normal,

*Read before the American Pediatric Society, Cincinnati, June 2, 1898.

as the first escape of meconium occurred during the examination. Posterior to the anal orifice, the skin appeared to be normal for about an inch, then became continuous with the integument over the tumor, and adhering firmly to the underlying parts.



FIG. 1. TERATOMA OF THE SACRUM AND COCCYX.

The greater portion of the tumor, particularly the lower two-thirds, was cystic in character, while towards the base the structures gradually became firmer, and were intimately and firmly adherent to the deeper bony structures. On the left side anteriorly and above (well shown in the photograph), was found

a hairy mole, or rather swelling, about one inch base; on the other side, quite a large port-wine mark existed.

In the absence of Prof. Jacobi, the case was admitted to my service at Gouverneur Hospital. My sincere thanks are tendered to Dr. Jacobi for the case and opportunity to present the specimen with the microscopic report.

Operation November 18, 1897. Chloroform narcosis. Parts rendered aseptic. A triangular flap, base about one and one-half inches wide, with apex downwards, was dissected away from the anterior aspect of the growth; then a second incision, semi-lunar in shape, encircling the somewhat constricted base was made, after which the deeper structures were cautiously dissected away—due care being taken to hug the tumor closely. The greater portion of the intimate fibrous attachments to the sacrum were cut. It was found that the coccyx and small part of the lower portion of the sacrum were so intimately adherent that these structures were resected.

The dissection was necessarily slow, as the rectal walls were in close opposition to the growth. At the inner sacral aspect three small cysts were found, and along the anterior surface of the sacrum on the left side when the bone had been taken away, a thick, dense, prolongation, running upwards, was discovered. Its nature was not evident, and not being able to trace it up any great distance without wounding important structures, it was thought best to ligate and cut below the ligature. No communication with the spinal canal could be made out. But one vessel required ligature, when the coccyx was taken away, probably the coccygeal artery. At the bottom of the large wound the rectum could be seen for an inch. The proximity of the wound to the anus and the inability to obliterate the dead spaces entirely, made it advisable to pack lightly with iodoform gauze. The greater part of the skin wound was brought together transversely with catgut sutures, the apex of the anterior flap being attached to the skin over the sacrum and a small portion on left side left open to allow removal of the gauze. Dressing then applied and patient sent to ward in excellent condition.

The subsequent progress was uneventful: the child was quieted by small doses of paregoric, and kept lying on its stomach to prevent soiling of dressings. The greater part of the wound healed primarily; the cavity lightly packed with gauze

was allowed to granulate. Patient discharged cured December 19, 1897.

The insignificant character of the scar is well shown in the photograph taken when the child was seven months old.

In speaking to a very prominent surgeon in regard to the case,



Fig. 2. TERATOMA OF THE SACRUM AND COCCYX.

he remarked that it was interesting to him, inasmuch as it showed how well infants tolerated severe surgical interference. The absence of shock is attributed in great measure to the skilful manner in which the chloroform narcosis was conducted by Dr. Jos. Huber.

My thanks are tendered to Dr. Pafford, House Surgeon, Gouverneur Hospital, and to the members of the staff, as well as the nurses, for the attention given the case.

MICROSCOPICAL EXAMINATION: By Dr. James Ewing.—The main mass of the tumor is composed of a granular, semi-fluid material, which on section proves to consist of imperfectly developed *nervous tissue* containing bipolar and multipolar nerve cells, neuroglia cells, neuroglia, and non-medullated nerve fibres. These elements are massed together very irregularly, but often reproduce the convoluted appearance of the cerebral gray matter. Stained with methylene blue, the chromatic substance and nuclei of these cells are seen to be very imperfectly developed or entirely absent. The central areas of the nervous tissue are largely necrotic. Along the periphery it pushes its way for considerable distance among the other tissues of the tumor but is everywhere separated from these tissues by a layer of endothelial cells. Throughout this mass are many irregular spaces of considerable size lined by *cuboidal epithelium* identical in appearance with the lining cells of the central canal. Some of these spaces are lined, however, by long *cylindrical epithelium* which sends numerous branching processes into the adjacent nervous tissue and recalls distinctly the appearance of *embryonal neuroblasts.* Along the edges of other spaces are many true ganglionic cells, some of which resemble the Purkinje cells of the cerebellum.

In sections through the pedicle, the spaces lined by cuboidal epithelium are abundant, and some appear to be continuous with the central canal of the spinal cord.

Surrounding the central mass of the tumor are a number of embryonal structures supported by ordinary connective tissue. Near the base of the tumor are several masses and plates of *embryonal hyaline cartilage.* These are surrounded by connective tissue in which there are some lobules of fat cells, and a few glandular alveoli of the type of mucous glands. In the same vicinity are several large spaces lined by cylindrical *ciliated epithelium,* and the association of these structures suggests an attempt to reproduce in the tumor the *respiratory passages* of the embryo.

In the neighboring region of the tumor were seen some elongated spaces lined by high columnar epithelium identical in appearance with that found in the ducts of the mucous glands of

the stomach, and representing the element of the *gastro-intestinal tract* which is usually to be found in teratomata.

A few bundles of a striated voluntary muscle fibres were found at several points in fibrous tissue.

A prominent excrescence projecting from the base of the tumor was found to be composed exclusively of fat tissue.

The entire tumor was surrounded by the distended integument of the buttock, and presented no abnormalities of interest.

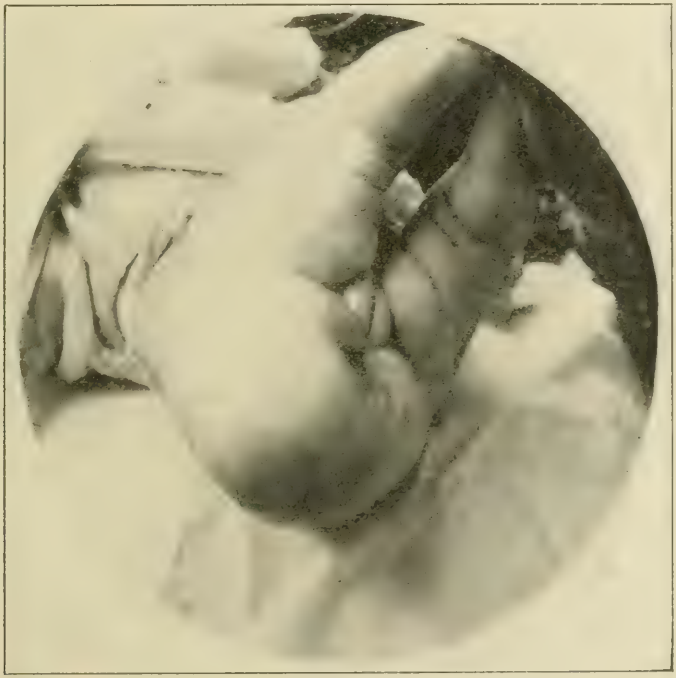


Fig. 3. DR. HEWLETT'S CASE OF CONGENITAL SACRO-COCCYGEAL TUMOR.

J. Bland Sutton, in his usual careful and scientific manner, has made a study of the tumors found in the sacro-coccygeal region. His classification has been referred to in the report of my first case in the transactions for 1892.

The careful and thorough microscopic examination made by Dr. Ewing, leaves no doubt as to nature of the tumor, and places the specimen presented to-day in the category of teratomata. A teratoma as defined by Sutton is an irregular conglom-

erate mass, containing the tissues and fragments of viscera of a suppressed fœtus, attached to an otherwise normal individual.

To appreciate the nature of these anomalies, Sutton found it necessary to consider the subject of conjoined twins, supernumerary limbs and acardiac fœtuses. I shall take the liberty to present his conclusions taken from his work "Tumors, Innocent and Malignant."

"Thus a study of the circumstances surrounding the development of twins and duplex monsters brings us to the conclusion that teratomata may arise either from partial dichotomy of the trunk axis of the embryo, or from complete dichotomy. In the latter case, while one twin has gone on to full development, the growth of the other has been arrested, and in some cases the suppression has been so great, that the companion fœtus is represented by a deformed or shapeless mass consisting of integument covering ill-formed pieces of the skeleton and portions of viscera.

"In a few cases of parasitic fœtuses we are able to offer a probable opinion as to whether the reduplicated parts are due to partial dichotomy of the trunk or are the result of complete cleavage, in which one of the fœtuses becomes an acardiac. In very many, indeed in the majority of teratomata, it is absolutely impossible to decide in favor of one method or the other.

"TREATMENT.—Parasitic acardiacs are in almost all cases so extremely valuable as sources of gain in fairs, shows, and large cities, that the parents, or the unscrupulous individuals who get possession of these children, will not permit operative interference. When the parasitic acardiac is of the amorphous variety and attached to the dorsal surface of the sacrum, attempts may be made to remove them. The children rarely survive the interference."

In this connection, the following case may be of interest, as representing another variety of the tumors met with in this situation:

At the invitation of Dr. W. W. Hewlett, of Babylon, N. Y., to whom I wish to tender my thanks, I was permitted to examine a little patient seven months old, with a sacro-coccygeal tumor. The growth presented a uniform shape and was evidently a unilocular cyst, situated between the rectum and the anterior sacral surface and coccyx. Its general appearance is distinctly shown

in the illustration (Fig. 3). How far it extended upwards in the pelvis could not be determined, as the anal sphincter was tense, firm and would not yield or dilate, upon attempted introduction of the finger.

In the absence of an exploratory puncture with a careful examination of the fluid contents, a differential diagnosis between post-rectal dermoid and anterior sacral spinal bifida was not made.

The skin was normal in every respect, no pigmentation, excessive growth of hair, or other abnormality visible. Fluctuation distinct; no translucency. The fatty tissue in excess formed a diffuse lipoma over the cystic growth.

No abnormality present along the spine further up; no evidence of chronic hydrocephalus. Aside from the cranio-tabes and other evidences of rickets, child well.

The presence of the diffuse lipoma would lead me to infer that the cyst below is probably connected with the spinal canal and that we have to deal in this case, with a spina bifida. To make a positive diagnosis, a careful chemical examination of the fluid should be made.

The history of the case furnished by Dr. Hewlett is briefly as follows: Mary M., born of healthy parents, weighed at birth ten pounds, has a large tumor of a soft semi-elastic feel, attached to the inferior and posterior extremity of the trunk. The growth does not interfere with nutrition nor any healthy function. She is now aged nine months, weighs seventeen pounds and is in good general health. The relative size of the tumor does not vary perceptibly from its appearance at birth. She measures 14½ inches around the abdomen on line with umbilicus, and 16½ inches around hips and most prominent part of tumor. Base of tumor 14 inches in circumference; from tip of coccyx to anus 6¾ inches.

The accompanying photograph was taken when the child was four weeks old.

209 EAST SEVENTEENTH STREET.

DISCUSSION.

DR. JACOBI.—I would like to ask in which direction did that duct or string go up?

DR. HUBER.—Along the anterior sacral aspect. After the coccyx and sacrum had been gotten out of the way, there was a

sort of prolongation that ran up. In the literature I find that very common.

DR. JACOBI.—Was it a string or a duct?

DR. HUBER.—It was difficult to say which it was. It was a sort of fibrous band that it was thought best to ligate and cut.

DR. JACOBI.—The doctor gave Sutton's division of these tumors. What did I understand him to say in regard to Luschka's gland?

DR. HUBER.—He considers it only the remains of a fetal condition in the post-anul gut.

DR. JACOBI.—That is a mistake on Sutton's part. Luschka's so-called gland, it is true, is not a gland at all; that has been proven long ago, but Luschka's gland now, I think, is established as being principally composed of blood-vessels, the last peripherous ramification of the middle sacral artery. They have been injected, which is ample proof of its vascular nature. Between those little branches, five or six generally, there is connective tissue and also nerve fibres, mostly sympathetic. That is what Luschka's gland is. Therefore it is possible that tumors of a fibromatous kind and of an angiomatous kind, now and then even sarcoma, may take origin in this so-called "gland." Other tumors, that were formerly attributed to this source, particularly by Braune in his large Atlas on Sacral Tumors, must not be attributed to this so-called Luschka's gland. Now the question is where this came from. This tumor is really a teratoma, inasmuch as it consists of ever so many different tissues which are found in one mass. This tumor contains cartilege, fluids, intestinal mucous glands and respiratory organs, so that it contains in fact, with the skin, all such tissues as come from the different germinative layers. The ectoderm and the mesoderm and the entoderm are all represented in that tumor. Now there s one point where all those meet each other in early embryonal life, viz.: the lower end of the early nervous system, which is probably just the point that these tumors come from, and it appears that an abnormal connection between the three might be considered the original cause of the tumor. These cases are usually attributed to the implantation of another fœtus. It looks to me as if this might be a case of development arrested at an early period when the three germinative layers are closely packed together.

GONORRHŒA IN CHILDREN: A FREQUENT OCCURRENCE AMONGST THE NEGROES OF BALTIMORE.

BY CHARLES O'DONOVAN, A.M., M.D.,

Professor of Diseases of Children in the Woman's Medical College of Baltimore.

The dispensary of the Woman's Medical College of Baltimore is situated just on the border of the section of the city which may be termed the negro quarter, and draws a large proportion of its material from that district. It is quite a common thing to have children present themselves with a suspicious discharge from the urethra or vagina, nearly always the latter, for such troubles seem to be far more prevalent amongst female children than males. Microscopical examination of the discharge, when purulent, invariably shows the presence of gonococci, so that treatment is now usually ordered for gonorrhœal infection, even before the smeared cover-slips are examined.

On October 12th we had in all twelve children who applied for treatment at the dispensary. Of these three had a purulent discharge, two girls, aged four and five years, and a boy of eight years, who had, in addition to the urethral discharge, an œdematous prepuce in state of phimosis, and a general syphilitic eruption over his body. In each case the pus was found to be full of gonococci.

The occurrence of this evidence of the widespread prevalence of gonorrhœa amongst these immature children, at ages when sexual congress, or even attempts at it, must be disregarded as the cause, is a very serious matter. The three children, though from the same general locality, were in no way connected by family ties or residential proximity, and the conclusion must be accepted that gonorrhœa is an endemic disease in the residences of many of the negroes of Baltimore, whence it is quite likely to be conveyed to other parts of the city in the constant interchange of visits between the negro servants, and by the custom of giving out soiled household linen to negro washerwomen to be laundered in their homes. This laundry work is done amid the most unhygienic surroundings, and the linen is handled and stored in the houses from which come the cases that seek relief at our dispensary. The large number of

these cases presenting themselves from time to time might make one doubtful of the accuracy of diagnosis, even with the microscope, remembering the existence of the pseudo-gonococci of various species, were it not for the well-known prevalence of gonorrhœa amongst our negroes and the careless habits of their home life. After inspecting the crowded rooms in which they live and perform so many functions of life in common, using towels, basins, and other appliances with the utmost disregard of cleanliness and no thought of the possibility of conveying infection, it is easy to understand how a single member of a family or household may communicate his disease to the others. The cases, as they came to us, were typical gonorrhœa. The extreme redness, the tenderness, the painful micturition with irritability of the bladder, the character of the pus and the amount of it, made the diagnosis of gonorrhœa easy; the appearance of the gonococcus in the pus added but confirmatory proof to what was already sufficiently evident.

The history of one of the cases offered additional proof, as it showed the existence of gonorrhœa in a member of the household from which the child came. I believe that this evil is increasing every year. I am sure that such a series of cases as we have had lately would have been regarded as very unusual but a few years back, but now the fact is hardly noticed. It is almost a daily occurrence for young negro and mulatto girls to be brought in for treatment of a vaginal discharge, and at such tender ages as makes it impossible to even suspect a direct infection. During the warm weather these children play together clad in scanty clothing, and wearing no underclothing, so that the more or less copious secretion from one who has become infected might readily be smeared over stools or other places where they are accustomed to sit, and so produce additional cases. When we have the opportunity we endeavor always to impress upon those who bring the children to the dispensary the necessity of observing the utmost cleanliness in the management of the cases and to point out the likelihood of the spread of the disease, if it is not properly treated until cured. For this reason we try always to have the children left at the hospital for nursing and treatment until cured.

10 East Read Street.

Clinical Memoranda.

A CASE OF INTUSSUSCEPTION.

BY T. J. ELTERICH, M.D.,
Allegheny, Pa.

Apropos to Dr. Rotch's "Short Reports on Unusual Cases" published in the September number of the ARCHIVES, I would report the following case of intussusception:

On the 17th of September a baby was brought to my office at 7.30 P.M., with the following history: The baby, a little girl, aged one year, and wet-nursed, had been perfectly well during the day and had had one evacuation from the bowels. Half an hour before, while nursing at the breast, the baby suddenly stopped nursing, uttered a piercing cry and kept on crying.

On examination the child was found to be exceedingly restless, nauseated and evidently in great pain. The face was pale, anxious, and of a peculiar waxy color, the cutaneous surface cool and the pulse very frequent. The abdomen was soft, not at all distended, in fact nothing unusual could be found at this examination. During the night the patient's condition grew steadily worse. It vomited frequently and passed bright red blood which later became mixed with mucous; the pulse became very frequent and the temperature rose to 102° F. On the left side of the abdomen a large tumor could be felt, about four or five inches in length, dull on percussion. Digital examination of the rectum revealed a soft tumor within two or three inches of the anus. The sudden onset of the symptoms, the passing of blood and mucus, the presence of a tumor on the left side of the abdomen and in the rectum, placed the diagnosis of intussusception beyond any doubt. An attempt was made to reduce the intussusception by hydrostatic pressure with the fountain syringe, at a height of two and a half to five and a half feet, with no result whatever. The patient was removed to a neighboring hospital for laparotomy, which was performed twenty-six hours after the beginning of the illness. On opening the abdomen the large intestine could be seen enormously distended and dark red in appearance. It was found that the in-

tussusception involved the whole of the cæcum; it had completely turned on itself and extended down into the rectum within a few inches of the anus. Considerable difficulty was experienced in reducing the invagination, although there were no adhesions. The patient died two hours after the operation from shock.

I report this case, since it is of somewhat rare occurrence for the cæcum to be solely and completely involved in an intussusception, and for the purpose of illustrating the futility of hydrostatic pressure in cases where a large portion of the intestine is involved. Hydrostatic pressure, in the hands of careful operators, is harmless and it does not seriously delay the more radical operation of laparotomy.

70 MADISON AVENUE.

SPONTANEOUS DISLOCATION OF BOTH KNEES IN A CHILD AGED EIGHT MONTHS.*

BY PHILIP F. BARBOUR, M.D.,

Professor of Chemistry and Chief of the Children's Clinic in the Hospital College of Medicine; Visiting Physician to the Louisville City Hospital, Louisville, Ky.

A child, eight months of age, was brought to me some weeks ago presenting a peculiarity of great interest. It was a spontaneous, or, I might say, an automatic dislocation of both knees, occurring simultaneously. The child was anemic, small for its age, marasmic, and had cut no teeth. It would cry out as if in pain and then the legs would be dislocated outward and backward from their articulations with the femurs, and in a moment return to their normal relations. It required considerable force on my part to get any abnormal motion in the joint, and such motion seemed to produce great pain. There was not the relaxed condition of the ligaments of the joints that is found in rachitic children, neither did the marasmus seem to be sufficient to produce that general relaxation of the muscular and ligamentous tissue that often renders dislocations so easy.

The lesion was not situated in the epiphyseal cartilages, nor

*Reported to the Louisville Clinical Society.

was there any evidence of a pseudo-joint. There was nothing indicative of a syphilitic taint.

I have not been able to find any such case reported in literature, but the explanation that occurred to me was that the articulating depression of the tibia was less than normal, while the ligaments of the joint were probably abnormally relaxed.

The patient was put on a general tonic treatment, including the lime salts and cod liver oil. Subsequently the mother reported that several teeth had been cut and that the spasms, as she termed them, had notably decreased in number and severity, but that occasionally when the baby was angry or crying hard, the dislocations would recur.

Prophylaxis of Nephritis in Scarlet Fever.—Alfaro, of Buenos Ayres (*Anales del Circ. méd. Argentino*, October 15; and *Journal of the American Medical Association*,) prevents altogether this dangerous complication of scarlet fever by observing the following precautions: (1) Keep the diuresis abundant with a strict milk diet, plenty of drinks, and cold hydrotherapy in severe cases. (2) Avoid the elimination by the kidneys of any irritating substances either from medication or from the food (avoiding phenol, salicylic acid, antipyrin, acetanilide, etc.) (3) Keep the functions of the skin as active as possible by general friction with fatty substances and tepid bath during desquamation. (4) Keep the mouth, nose and pharynx aseptic with frequent mild antiseptic applications to prevent the introduction of the streptococcus into the general circulation. (5) Avoid sudden or continued exposure to cold air. (6) Use no antipyretics or antiseptics that could possibly effect the kidneys injuriously by elimination or absorption.

Suicide Among School-Children.—The occurrence of suicide in three school-children in Berlin, recently, has renewed public attention to the overwork entailed at school at a critical time of life, and the nervous hyperexcitation at these periods, caused by prize-competitions and the worry of preparation for examinations. One of the children had just previously failed in an examination; another had missed taking a much-coveted prize, for which he had worked very hard. All were between twelve and fifteen years of age.—*Philadelphia Medical Journal.*

Occasional Periscope of Teratology.

BY J. W. BALLANTYNE, M.D., F.R.C.P., ED.,
Edinburgh, Scotland.

Roubinovitch, J.: Pelvic Phocomely. (*Compt. rend. Soc. de biol.*, 10 *s.*, Vol. v., p. 819, July 29, 1898.)

Roubinovitch describes the case of a boy, thirteen years of age, who came of a family free from deformities. His father, however, is an inveterate absinth drinker. His mother died at the age of forty with leftsided hemiplegia. At his birth it was noticed that a loop of the umbilical cord surrounded the lower end of his left leg; in cutting it off the midwife wounded the skin and a linear cicatrix marks the spot. He suffered from scorbutus when six years old. Apart from the deformity of the left leg there were no signs of defective development, physical or psychical. The left lower limb is 168 mms. shorter than the right. There is a femur, as is proved by the radiograph, but it is thin and 1 cm. too short. The hip joint appeared normal save for defective rotation of the thigh on the pelvis. The use of the radiograph showed the absence or the fibula, the presence of a very short, thin, slightly curved tibia, and the absence from the tarsus of the cuboid and the last cuneiform. The mobility of the knee was normal. The foot, in a position of talipes valgus, contained three metatarsals, normal in shape, but short and thin. There were three toes with normal phalanges. Roubinovitch regards the cause of the deformity as the compression of the leg by the umbilical cord, looking on it as an arrest of development by intra-uterine mutilation. [Hemimely would be a more appropriate name for the condition described above. J. W. B.]

Rischpler, A.: Three Cases of Exomphalos. (*Archiv. für Entwickelungsmechanik der Organismen*, Vol. vi., p. 556, July, 1898.)

Rischpler describes, with full anatomical details, three cases of exomphalos, of which two were recent specimens and the third an old museum preparation. All three were without the placenta, a fact which greatly diminishes the value of some of

the conclusions. In all, the abdominal wall passed immediately into the sac of the eventration, but with a distinct boundary line marking the separation. The sac wall consisted of two layers, one, the outer, being amniotic, the other, the inner, being formed of peritoneum. Between these was a gelatiniform substance of doubtful origin. The sac contained the heart, the left lung, the liver, stomach, spleen, and intestine. All these viscera showed a distinct twist forward and to the right. The diaphragm was not developed, but in one case a rudimentary muscular cord representing it was found. The internal genitals were present in all the three cases; in two, ovaries and tubes, and in one, testicles; they were above their usual level in the abdominal cavity. In all the specimens there were evident traces of peritonitic adhesions between the abdominal organs, and in all the vertebral column was much distorted. In two there was scoliosis and lordosis, and in the third, lordosis alone. In two the exomphalos was complicated by anencephaly. The anomalous arrangement of the vessels in the abdomen was of great interest. In one case there was persistence of the right umbilical vein along with the presence of only one umbilical artery; in another the left umbilical vein had an unusual course as regards the liver, for it did not enter it and there was no ductus Arantii, the inferior vena cava was absent, as was also the superior mesenteric artery. In the third specimen there was persistence of the right umbilical vein which gave off several branches in the liver and thus communicated with the ductus Arantii. The author is of opinion that abnormally extensive adhesions between the amnion and chorion are the causes of the exomphalos and the vertebral twisting. [It is possible to take another view of the vascular arrangements in two at least of the cases. It may be that we have here to do with persistent omphalo-mesenteric vessels and absence of the allantoic ones. This would explain the peculiar relations of the vessels to the liver. If so the cases would serve to support the opinion that I stated in a paper on "the occurrence of a non-allantoic or vitelline placenta in the human subject" which I published recently in the *Scottish Med. and Surg. Journ., viz.:* That in sympodia and exomphalos the placenta is formed, in the absence of allantoic vessels, from the persistent vitelline or omphalo-mesenteric vessels. J. W. B.]

Guranowski, L.: Case of Double Auditory Meatus. (*Przeglad Chirurgiczny*. Vol. iv., p. 217, Warsaw, 1898.)

In a man aged twenty-nine years Guranowski found on examination of his right ear that a septum divided the auditory meatus into two parts. The septum was made up of skin and a thin layer of cartilage, and was directed from above downward and from behind forward. The openings were thus anterior and posterior; the latter ended in a cul-de-sac and the former represented the true auditory meatus with the tympanum at its deep end. The rest of the external ear was normally formed. Guranowski considers his case as unique.

Delassus: Double Terata. (*Journ. des Soc. méd. de Lille*, Vol. xxi., p. 265, September 17, 1898.)

Delassus, in an article on double monsters in general, comes to the conclusion that they are not hereditary. Undoubtedly twin-bearing is a hereditary accomplishment. A case is cited by Delassus in which a woman gave birth to thirty-two children in eleven confinements, and she was born with three other fœtuses and had thirty-eight brothers and sisters. But, on the other hand, double terata have normal brothers and sisters, and when such have married, as was the case with the Siamese twins, the progeny were not double but single births. The probabilities are against the heredity of double terata, but the evidence is not sufficient to make a certain conclusion possible. [There is good reason to believe that twinning is essentially a different process from the formation of double monsters; the former is probably due to too many ova in the ovary, the latter to the penetration of one ovum by more than one spermatozoon.]

Variot, G.: Heredity of Cardiac Malformations. (*Journ. de clin. et de Thérap. Infant*, Vol. vi., p. 783, October 6, 1898.)

It is rare that one meets with cases of direct heredity in cyanosis due to congenital cardiac malformation, for individuals with this condition are usually weak and die young or do not marry; but one does sometimes meet with cyanosis in the progeny of individuals suffering from acquired heart lesions. In the case reported, a boy aged eleven and a half years showed very marked signs of cyanosis (blue lips, cold hands and feet, enlargement of the terminal phalanges of the fingers, etc.), which were observed by the mother very soon after his birth,

at least it was noted that he was a blue baby. The clinical examination revealed the presence of contraction of the pulmonary artery and an interventricular perforation. The father of this boy died three years after the birth of the latter from heart disease due to rheumatism. The mother is a delicate woman of thirty-two, with a dilated heart and mitral stenosis. It is not certain but it is extremely probable that the heart condition existed before the woman became pregnant. Variot believes that the case goes to support the idea of the influence of indirect heredity in the pathogeny of cardiac malformations.

Keersmaecker, J. de: Case of Double Urethra. (*Ann. et. bull. Soc. de méd. d' Anvers;* Year 60, p. 163, July and August, 1898.)

Keersmaecker reports the case of a youth whose penis showed a dorsal fistula from which a discharge (neither urine nor semen) occasionally occurred. The normal urethral meatus was situated a little lower than usual and had no connection with the supplementary dorsal urethra. The glans between the two orifices was quite normal. The dorsal urethra measured 7 cms. in length, and lay in the middle line between the two corpora cavernosa immediately below the skin of the penis. Bacteriology showed that the discharge was not gonorrhœal. An operation was proposed but was refused by the patient, who did not return for further treatment.

24 MELVILLE STREET.

Diphtheria Infection by a Cat.—N. A. Thomas (*Philadelphia Public Health*) says that a child was taken ill with diphtheria that had not been out of the house for many weeks; furthermore, there had been no case of diphtheria in the town for many months. It was discovered that a vagabond cat had come in contact with the child; the cat coughed, sneezed and vomited frequently, and the child nursed the animal during this illness. The child died, and the cat was killed. Covering the cat's larynx was found gray adherent membrane; no bacteriological examination was made, but the diagnosis was made by the characteristic appearance of the larynx and the infection of the child. This case again reminds us of the possibility of domestic animals spreading diphtheria.—*Medicine.*

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

JANUARY, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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MECKEL'S DIVERTICULUM.

Meckel's diverticulum is a curious and interesting anomaly, several cases of which have recently been reported. It was observed by a few of the earlier anatomists, but was first accurately described by Meckel in 1809. It may be defined as the remnant of the omphalomesenteric duct, which is the original communication between the yolk-sac and the intestine. This duct usually closes during the second month of embryonic life. Before that time a loop of the developing intestine is normally present in the umbilical cord. If this does not retract and the duct fails to become wholly obliterated, we have the anomaly known as Meckel's diverticulum. This commonly appears as a blind pouch like the finger of a glove, and is due to persistence of the proximal portion of the duct. It is given off from the ileum, usually about one foot above the ileo-cæcal valve. At the end of this pouch, there is, in some cases, a fibrous cord which may be attached to the umbilicus or mesentery or may lie free in the abdominal cavity. The anatomical structure is identical with that of the intestine.

In some cases, instead of being closed at the distal extremity, the duct remains pervious, terminating in a minute opening at

the umbilicus, thus resulting in a fæcal fistula. In other more rare instances the mucous membrane prolapses to form an actual umbilical tumor with a fæcal fistula at its summit. A probe passed into such a fistula soon finds two channels, the one passing upwards into the upper bowel, the other downwards toward the lower bowel. In more extreme cases a flat pedunculated tumor is formed with two fistulous openings communicating with the bowel. The tumor may even contain coils of intestines.

In the lower animals anomalies of this character are not uncommon, but in man they are rare. Deuchin, who examined 1,367 bodies for vestigages for the vitelline duct, found them in but 1.8 per cent., many of them being very slight. Meckel's diverticulum is frequently accompanied by other anomalies of development, among the most common being spina bifida, hare-lip, cleft palate, and transposition of the viscera.

THE PATHOLOGICAL IMPORTANCE OF MECKEL'S DIVERTICULUM.

In a recent article on this subject, Dr. David Riesman points out the fact that Meckel's diverticulum is important pathologically for two reasons: First, that ulcerative lesions occurring in it are prone to lead to perforation, and, second, that it is apt to cause strangulation of the bowel. Perforation may be due to the entrance of foreign bodies into the cavity. In typhoid fever the ulcerative processes may extend into it, when perforation is particularly liable to occur.

The most important morbid condition resulting from the diverticulum is undoubtedly intestinal obstruction due to incarcination of the bowel by the process. If the diverticulum is free, strangulation is rare. When attached to other tissues by a band, however, the chances for obstruction are greatly increased. The band is most often attached to the mesentery, but is frequently attached to the anterior abdominal wall, either at or near the umbilicus. Occasionally the cord hangs free in the abdominal cavity, having been torn across by some sudden tension. At-

tachment to the mesentery results probably from a torn cord forming adhesions to the tissues against which the torn end comes in contact. These bands are undoubtedly sometimes formed by the remains of the vitelline vessels. They are sometimes found where there is no diverticulum.

Strangulation results from the slipping of a loop of bowel underneath one of these bands and there becoming incarcerated. It is an accident more common in early life, and is more frequent in the male than in the female.

Strangulation may, however, occur in later life, and is not uncommon among young adults. Dr. Riesman, in the article already referred to, after an exhaustive review of the whole interesting subject, reaches the following conclusions:

(1) Remains of the omphalomesenteric structures are not rarely found.

(2) Persistence of these structures may affect the proximal part of the duct (Meckel's diverticulum), the distal part of the duct, the entire duct, the more central parts, or the blood-vessels.

(3) The dangers from Meckel's diverticulum are perforation from ulcerative processes and foreign bodies, strangulation, and intussusception of the intestines.

(4) Strangulation is most apt to occur when the diverticulum is adherent. It is most common in the male sex and in early life.

(5) Persistence of the entire duct may lead to fæcal fistula, to prolapse of the duct, or to prolapse of the bowel with strangulation.

(6) Persistence of the vessels, with or without persistence of part of the duct, very often leads to strangulation of the intestines.

INFANT MORTALITY.

In a recent series of articles upon the causes of death among infants in Ireland, Dr. Letters makes some very judicious remarks upon the general subject of infant mortality. He begins with

the assertion that we must not hope to reduce the death rate of infants below a figure that will always be high relatively to death rates among adults. "To upset a universal law," he says, "is beyond our powers. With regard to death during infancy, it is a universal law that the liability to death is greatest in the earliest weeks of life, and with each succeeding week from birth there is an increasing security, which we see to be distinctly marked and easily measured after the completion of the third month. This security increases until the period of infancy expires. If we seek to reduce infantile deaths, it is not by overturning nature's law that we should work, but by doing our utmost within that law."

These words are unquestionably true, and the writer of them does not deny that the death rate of infants may be decidedly reduced without subversion of this natural law. Every observer of infants and children must agree that we should not stand idly by, practically confessing our inability to save life at its earliest stage, when we put forward our best efforts, at all other periods of life, with proved success.

The fact must still remain, however, that the death rate among infants and little children must almost of necessity be higher than that of adult life. This is particularly true in hospitals where very young infants are received. Except, perhaps, in a few rare instances, where much money is available and where every lesson learned from experience is observed, the mortality rate of children's hospitals is comparatively large and is frequently a source of disappointment to those interested in their management.

REVISE THE CONSTITUTION.

Have the members of the American Pediatric Society read the Constitution recently? If they have not they will be surprised when they do so, for it is a document calculated to cause pain in the breast of the reader. It is an anæmic, one might, indeed, say a marasmic constitution. There is but little of it,

and what there is, is not calculated to inspire respect. It has for many years been observed, more in its breach than in its observance. The chief reason for this is not difficult to find and is, it must be admitted, rather creditable to the Society. Its affairs have run so smoothly thus far, and the friendly feeling among its members has been so pronounced that a constitution has scarcely seemed to be needed. Here, as in some other places, a little matter like a constitution has not been permitted to stand between friends. But this happy condition may not be perpetual. A warning is furnished by the experiences of the scientific society upon the Stanislaus, whose proceedings have been so ably described by Bret Harte. He thus refers to its earlier days:

> "Now nothing could be finer or more beautiful to see
> Than the first six months' proceedings of that same Society."

A misunderstanding then suddenly arose and the society came to untimely grief, owing in part, it would seem, to the absence of a well-administered constitution. During pleasant weather, constitutions and anchors may prove of but slight use, but in squally weather they may prevent disaster.

Amendments and changes have been made from time to time in the constitution of the American Pediatric Society, but they are scattered in various places, and are either forgotten or disregarded. The only copy of the constitution we have seen is printed in Volume I. of the Transactions. The various amendments ought to be collected and the constitution brought into accord with the practices that experience has shown to be necessary for the proper working of the Society. Better appoint a committee at the next meeting to revise the constitution.

PREVENTABLE DISEASES.

In a recent article Dr. H. M. Sherman reports nine cases of scurvy occurring in California, the ages of the patients ranging from ten to seventeen months. He draws the same conclusions regarding causation that all observers have done, believing it to

be due to improper food. The author refers to the fact that we have to deal with many conditions of infancy which are not preventable, or which we, in our professional capacities, do not get an opportunity to prevent. Here is one that is entirely preventable and which we have the opportunity, frankly offered, of preventing. The problem of the successful feeding of infants who cannot be suckled properly, by reason of a maternal failure or fault, is fairly well worked out, and, in the most obstinate case, it only means a little patient trial, on simple lines, to get a formula for the modification of cow's milk to suit the individual. In no case is it necessary for the physician to seek information, instruction, or assistance from a commercial house. Pediatrics offers a wide field of interesting questions, an opportunity for much original work, and a career with satisfactory reward. Why does the general practitioner neglect it?

The Bacteriology of Pertussis.—Henry Koplik in the *Bulletin of the Johns Hopkins Hospital* for April, 1898, discusses the various parasites that have been associated with pertussis, particularly the bacillus discovered by Czaplewski and Hensel, which he compares with the one previously described by himself. The latter is obtained by collecting the sputum in sterilized Petri dishes, allowing it to stand, then fishing out the small grayish-white particles, and inoculating them upon hydrocele slants. At the end of from twenty-four to forty-eight hours in the incubator, a mixed bacterial growth appears on the surface. This is suspended in bouillon, and spread over another tube. The bacilli of pertussis appear as a delicate grayish-white or pearly growth. Upon agar the colonies are whitish or grayish by reflected light, and straw color by transmitted light. The bacillus is facultative, anærobic, does not stain by Gram's method, excepting in pure culture, and measures from 0.8 to 1.7 μ in length and from 0.3 to 0.4 μ in width. The staining is more pronounced at the ends, and is not of a true polar type. The organism cannot be found in the sputum during the prodromal stages.—*Medicine.*

Memoir.

WILLIAM T. PLANT, M.D.

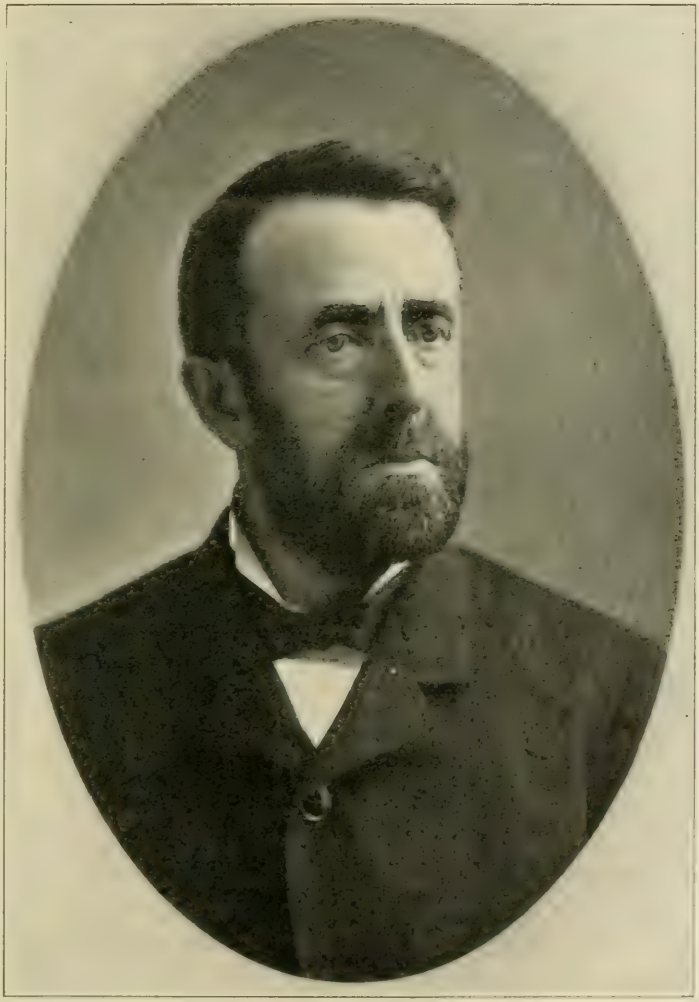
The first article published by the ARCHIVES in its first number in January, 1884, was written by Dr. W. T. Plant of Syracuse. To-day we have the sad duty of recording his death, which occurred on October 27th, after a life of great usefulness and honor. He was widely known as a writer and teacher of pediatrics, and was one of the most prominent physicians in the city in which he had lived and practiced for more than thirty years. Until debarred from literary work a few years since by ill health, he was a frequent contributor to the ARCHIVES and one of its collaborators from its inception.

Dr. Plant was born at Howlett Hill, New York, in 1836. He was educated at the Onondaga and Fairfield Academies, and in 1860 graduated from the Medical Department of the University of Michigan. At the outbreak of the Civil War, he at once offered his services to the Government and was commissioned an assistant surgeon in the Navy. He first served in the Brooklyn Navy Yard, but was soon assigned to the New Ironsides, where he did the chief part of his service. He served, however, upon other vessels and was on duty on the "Housatonic" at the time of its destruction by a torpedo. At the close of the war he resigned from the Navy and entered upon the practice of medicine in Syracuse. He was one of the founders of the College of Medicine in that city, and was for fourteen years its Registrar. He was upon the staff of the House of the Good Shepherd and served in many professional and public capacities. Upon entering private practice, he married Miss Frances C. Walrath, who survives him. He leaves also a son, Dr. John W. Plant.

Dr. Plant led an energetic, faithful, and upright life, and was held in extraordinary esteem and respect, both personal and professional.

"The sum of all eulogy," writes a friend, "that need be written of Dr. Plant—perhaps the one eulogy he would choose to have written—lies in the simple phrase, 'He was genuine.' He hated shams and was pretty certain to let the shams find it out. He was fine in the qualities of fidelity and courage and equally fine in his modesty."

The following words appearing in an editorial article of a prominent journal form one of the finest eulogies that could be written of any man: "He filled his mission. He did what he could. Dr. Plant was a man who has left the world better for having lived in it."



WILLIAM T. PLANT, M.D.

Bibliography.

Cleft Palate: Treatment of Simple Fractures by Operation; Diseases of Joints, etc.: By W. Arbuthnot Lane, M.S., London: The Medical Publishing Co. Pp. 278. Price 5s.

This little book consists of a number of clinical lectures which have been published by the author from time to time. The first upon cleft palate is a concise but satisfactory review of that subject. The author advises operation during the fifth week and gives minute details as to his method of operating. Under the head of Acquired Deformities, he alludes to knock-knee, flat-foot, lateral curvature, and dorsal curvature. The lecture on traumatic arthritis is worthy of particular mention, as well as that upon the principles involved in the treatment of fractures. An interesting and unique lecture is that upon the consequences of wearing boots. Lectures of especial interest to pediatrists are those upon tubercular joint disease and hip joint disease. A lecture recounting experiences in the surgical out-patient room of a children's hospital also contains some very interesting items. Altogether the book contains many points of interest and value upon the subject of surgery in children.

A Text-Book of Mechanico-Therapy (Massage and Medical Gymnastics). Especially Prepared for the Use of Medical Students and Trained Nurses. By Axel V. Grafstrom, B.Sc., M.D. *Late Lieutenant in the Royal Swedish Army. With Eleven Pen-and-Ink Sketches by the Author.* New York: O. M. Foegri & Co. 1898. Pp. 139.

This little book is chiefly of interest to the readers of this journal because of a chapter of mechanico-therapy as an agent in the treatment of the diseases of children. The first condition for which it is recommended is asphyxia neonatorum, the various methods of artificial respiration being described. Constipation and various forms of abdominal disorder are next considered and this is followed by directions for treating different forms of paralysis. Enuresis is also considered, and curvature of the spine and other deformities. We are somewhat surprised to learn that a course of general massage will, in a comparatively short time, effect a cure of rickets. The chapter contains numerous valuable suggestions.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Meeting of November 10, 1898.

J. Henry Fruitnight, M. D., Chairman.

DEVELOPMENT OF TRAUMATIC CATARACT IN AN INFANT'S EYE FROM PRESSURE OF FORCEPS.

Dr. Edward S. Peck reported this case, which occurred on October 14, 1890. The infant had been delivered by a high forceps operation, during which the right eye had been injured. On his arrival he found that the forceps had rested just under the inferior lid of the right eye, and that the helix of the ear on that side had been turned back. There was a large sub-conjunctival hemorrhage, the eyelid was swollen, the cornea was "steamy," and the right pupil was larger than the left. In the course of twenty minutes the pupillary reflex on the right side changed from a dull gray to a white, and under atropin the opacity of the lens slowly increased until a soft cataract entirely filled the lens. The treatment for the first forty-eight hours consisted in the use of ice-cloths and the instillation of 1 to 500 bichloride solution and of one drop of one grain to-the-ounce solution of atropin at intervals of four hours. By the next day the sub-conjunctival hemorrhage and lymph swelling had disappeared, and at the end of forty hours the eyeball had regained its spherical shape, the ocular tension was the same as that of the other eye, and the cataract was milk-white. On the ninth day the lids opened for the first time unaided. On November 16, both eyes were equally open, the cornea had regained its clearness, and perception of light was manifest by subjective tests. When next seen on March 26, 1891, both pupils were of the same size and the injured one was responsive to light. The ophthalmoscope showed a red reflex, and a spot of diffused cataract remained. About two years afterward the right eye showed a slight divergent squint. When the child was examined last May, or over seven years after the injury, the vision of the

right eye was 20-70, and there was every reason for believing that in time the vision in that eye would be completely restored. Dr. Peck said that he had been unable to find on record a case just like this one.

DISCUSSION ON THE TREATMENT OF PNEUMONIA IN CHILDREN, IN HOSPITAL AND GENERAL PRACTICE.

THE MANAGEMENT OF THE FEVER OF PNEUMONIA.—DR. HENRY DWIGHT CHAPIN took up this subject. He said that frequently the fever caused little inconvenience, and as the inflammation of the lung subsided the fever would also subside. Some children bear very high temperature without much evidence of disturbance, but in others the constitutional disturbance is so marked as to call for immediate interference. In one case a temperature of 102° or 103° might call for special treatment; in another, a temperature of 104° or 105° might be well tolerated. In some infants high temperature results in stupor or even coma. When there is a very high temperature in pneumonia there is a marked acceleration of the respirations, and this, of course, adds to the exhaustion and increases the congestion and resistance in the pulmonary circulation. It had been shown by experience that the control of the pyrexia gave a certain amount of relief. In croupous pneumonia the indications for interference were not so important as in the hyperpyrexia of broncho-pneumonia. In the treatment of the fever all depressants should be avoided, and hence, as a rule, the coal-tar products are excluded. The application of water was, on the whole, the most satisfactory method of controlling hyperpyrexia. Finally cracked ice packed in bladders can be molded to the head, and in this way the temperature kept within proper limits. He has often found it useful to employ ice-poultices, made by mixing finely cracked ice with flaxseed meal in oil-silk, and placing them around and on top of the head. If this were not sufficient, the child should be stripped, wrapped in a blanket, and placed on the table. After giving a stimulant, and placing hot bottles to the feet, a compress sufficiently large to surround the chest, is plunged into water of a temperature of 70° to 95° F., and then wrapped around the chest. This is changed about every fifteen minutes until the desired result is obtained. If the temperature were 105°, the water might be 95°, or even warmer at the start. If the temperature does not yield, the temperature of the water may be reduced

gradually down even to 60°. Sometimes a better result would follow the addition to the water of about one-fourth its volume of alcohol. When the temperature had been reduced to 102° or 103° the compresses should not be renewed. The deepened respirations produced by the compresses have a favorable effect on the pulmonary circulation. He believed that all the good effects which might be obtained by the use of the tub bath could be secured by the proper employment of the compresses. Where there was great restlessness, he had obtained good results from the warm bath, at a temperature of 100° F.

The Treatment of Pneumonia at the Babies' Hospital.—Dr. L. Emmett Holt took up this subject. He divided the cases into three groups, viz: (1) Those in which death results from exhaustion; (2) those in which it is due to complications; and (3) those in which the lethal result is attributable chiefly to the acute toxæmia. As to the relative frequency of each in hospital practice, he estimated that 60 per cent. of the fatal cases belonged to the first group, 25 per cent. to the second and 15 per cent. to the third class. A hospital patient suffering from pneumonia should have not less than one thousand cubic feet of air-space, and such cases should be frequently changed from one ward to another in order to still further insure a sufficient supply of fresh air. It was desirable that water should be given freely, and this could best be done by adding it to the child's food. No medicine should be administered except to meet some definite indication. The cough could be better managed by inhalations of creosote or eucalyptus than by the usual cough medicines. Moderate counter-irritation was desirable, and could be best maintained by the use of a mustard paste for a few minutes every three or four hours. Where cardiac or respiratory stimulants were indicated he preferred strychnia, nitroglycerine, oxygen, alcohol, or caffein, in about the order named. The dose of strychnia should rarely exceed $\frac{1}{100}$ of a grain every three hours for a child of one year, and while $\frac{1}{100}$ of a grain of nitroglycerine might be given hourly for a few doses, it should not be continued in this strength very long unless the interval were increased. He found it very useful where there was evidence of intense pulmonary engorgement. One was apt to give alcoholic stimulants too freely, and it was rarely necessary to give more than one ounce of brandy in the twenty-four hours.

Oxygen was useful, but too expensive to be used very generally. Caffein sometimes acted particularly well in doses of $\frac{1}{10}$ of a grain. High fever was best controlled by the cold pack.

The chief points in the treatment might be summarized thus: (1) No depleting measures are ever admissible; (2) hygienic treatment is indicated, such as fresh air, proper feeding and good nursing; (3) no unnecessary medication is permissible; (4) many annoying symptoms may be relieved by local measures; (5) the administration of stimulants should be determined solely by the condition of the pulse; (6) high temperature is much more safely and effectively controlled by cold than by drugs, (7) greater caution is necessary in the use of powerful drugs than is generally observed; and (8) rest is quite as important as in any other serious disease.

The Treatment of Pneumonia in Infants and Children.—Dr. Henry Koplik said that the treatment was largely influenced by the fact that the acute pneumonias of childhood are infectious, and it must vary with the age and condition of the patient, and the severity and extent of the infection. He had not obtained good results from the use of nitroglycerine, and objected to caffein, ammonia, camphor and musk because of their transient action. His chief reliance was on strychnine, given hyperdermically in doses of $\frac{1}{30}$ of a grain. Baths should not be employed when the temperature had started downward, and they should never be repeated unless there was an entire absence of cardaic depression after them. Among the poor, where hydrotherapy was often out of the question, the high fever might be controlled by giving, to a child of six months to a year old, half a grain of phenacetin and half to one minim of tincture of digitalis, every three hours. As alcohol interferes with digestion and causes nausea and vomiting, he only used it in certain markedly asthenic cases.

The Treatment of Pneumonia Complicating Measles.—Dr. Walter Lester Carr considered this part of the subject. He advised keeping these patients in a well-ventilated room, having a temperature of 65° or 70°, and keeping the air moist with steam. The nasal passages should be kept free and clean by injecting salt solution at a temperature of 100° F. To calm the nervous system and relieve the breathing he uses a weak mustard paste instead of poultices, as he considers the latter harmful, not

only on account of their weight, but because of the necessity of frequently renewing them. The breathing might often be rendered easier and expectoration facilitated by the moderate use of steam, either alone or impregnated with turpentine or benzoin. Hyperpyrexia was best combated by baths and wet packs, but the water should not have a temperature in any case below 60° F. For great restlessness, he recommends codeia in doses of $\frac{1}{16}$ to $\frac{1}{4}$ of a grain, and for pulmonary congestion, nitroglycerine. Alcoholic stimulants should not be given as a routine, but it was the exception to find a case of broncho-pneumonia in children which would not be benefited by their use at some stage of the disease. As the acute symptoms subside, cod liver oil is to be given, unless the fever is quite high, and the efficacy of malt extract would be enhanced by the addition of half to one minim of creosote to each dose. As children do not expectorate, he saw no advantage in prescribing the nauseating expectorants.

Hydrotherapy in Pneumonia—Dr. Simon Baruch discussed this phase of the subject. He emphasized the fact, that as the secondary effect of the application of cold to the body surface was the dilatation of the cutaneous vessels, the heart was relieved of a great deal of work. In addition to this, the systole of the heart was strengthened, and the increased flow of blood through the skin and kidneys augmented the activity of these important excretory organs of the body. He preferred the tub bath with continuous friction in children under three years, but did not employ it in older children unless they were exceedingly tractable and but little disturbed by the baths. Where the body temperature was between 101° and 103° F., the bath should at first have a temperature of 95°, and be gradually cooled down to 85° or 70°. This bath should be repeated at intervals of four hours until the temperature fell below 101°. He made it a rule in pneumonia, never to use baths having a temperature less than 75°, because the patient's power of resisting cold is much less in pneumonia than in typhoid fever. In the intervals of the baths, it was well to apply a wet compress around the body. This was best made of three folds of old linen dipped in water at 70°, and changed hourly if the patient were not asleep. Spontaneous reaction must always be provided for by frictions during the bath, and when the bath is followed by cyanosis and chattering of the teeth, one might rest assured that there had been some fault in the technique.

GENERAL DISCUSSION.

Dr. Floyd M. Crandall said that there were many differences of opinion regarding the treatment of pneumonia, yet there was a fair degree of unanimity regarding the essentials. It was generally agreed among pediatrists that drugs afford a very slender reed upon which to lean in the management of pneumonia in children, yet general practitioners were still very prone to indulge in some very strange shot-gun prescriptions for patients of tender years suffering with pneumonia. It was also pretty generally agreed that these little ones should be kept very quiet, and that the diet demanded very careful attention. It could hardly be emphasized too much, that the life of the child was often jeopardized by the over-zealousness of the physician or nurse. In private practice, many cases of pneumonia were self-limited. An ordinarily vigorous child of from one to three years contracting pneumonia had a far better chance of recovering than of succumbing to the disease. Many of these children would pass successfully through the disease without any medication whatever. He favored the use of the pack and the exclusion of the coal-tar products in the antipyretic treatment of this disease. In the early stage, when the fever is high, the child is thirsty, and if milk is given at frequent intervals the stomach will soon rebel, and there will be added to the pneumonia a very serious attack of indigestion. After the disease had advanced further the child usually lost its appetite, so that it became a difficult matter, and sometimes an impossibility to give sufficient food. For this reason the little one should be regularly and judiciously fed from the very outset, and the food should be given with as much care and regularity as medicine. Personally, he relied upon the use of the steam tent, with creosote in the steam, and the application of mustard pastes, as the chief features of the treatment. In his experience this treatment had been exceedingly satisfactory, both to him and to the parents and attendants of the children.

Dr. W. P. Northrup entered a plea for greater precision in the early diagnosis of the pneumonias of childhood, on the ground that it was not at all rare to find children treated for meningitis at first, the cerebral symptoms misleading the physician from the true diagnosis of pneumonia. While he was not yet ready to entirely and unconditionally abandon the poultice

treatment, he felt that it was rarely called for, and that as ordinarily employed, it usually did much more harm than good. There was certainly no good reason for enveloping in flaxseed poultices a child struggling already with a temperature of 104° or over. Where there was much nervous excitement he would use cold-packs to the trunk, and hot bottles to the extremities.

Dr. H. W. Berg characterized the old treatment of pneumonia in children by poultices as nothing short of barbarous, and placed the oil-silk jacket in the same category because, as he said, it was really a light poultice. He had not found that small and safe doses of the coal-tar antipyretics had any effect on the fever, and the larger doses, those capable of reducing the temperature, were exceedingly dangerous. By the larger doses he meant two or three grains of antipyrin to a child of one year. Although he was unable to explain its action, he had repeatedly demonstrated the fact that quinine is very beneficial in bronchopneumonia if administered in such a way that the full bitter effect is obtained. A point often overlooked in the management of these cases was, that the cough is Nature's safeguard against the spread of the pneumonic process by the accumulation of the secretion in the terminal lobules of the lung. It was evident, therefore, that all treatment directed towards suppressing the cough was mischievous.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Meeting of November 18, 1898.

Dr. A. B. Judson, Chairman.

THE PREVENTION OF DEFORMITY AFTER EXCISION OF THE KNEE IN CHILDREN.

Dr. W. R. Townsend read a paper on this subject and reported the histories of eight cases seen within the past two years at the Hospital for the Relief of the Ruptured and Crippled in which excision had been performed in early life in other hospitals. All of these cases presented some shortening, the greatest amount being 9½ inches, the least one-half inch. They all presented flexion deformity, the greatest was held at right angle, the least deformity was 25 degrees, the average being

nearly 50 degrees. Two showed bow-leg deformity and one knock-knee. Two had motion and six were firm. He quoted the views of several orthopedic text-books and the "Treatise of Surgery by American Authors" to show that the operation was indicated only in exceptional cases. The shortening was greatest when both epiphyses of femur and tibia were removed and in early childhood with extensive disease present it was difficult to remove all diseased tissue without invading the cartilage between the epiphysis and the shaft of the bone. He showed the necessity of long continued after-treatment, either by plaster of Paris or some form of brace if deformity was to be prevented, for many cases of apparent bony union began to present deformity months after the operation, and in some it rapidly increased. The different methods of correcting the deformities were referred to and forcible correction under an anæsthetic was advised only in those cases where by very slight pressure the flexion deformity could be overcome. In several cases osteotomy or another excision was advised. Braces and operative procedures were advocated for the bow-leg and knock-knee deformities.

He presented two patients who had had excision of the knee in early life to illustrate some points made in the paper. The first patient was a boy fifteen and one-half years of age who had an excision performed when he was three years old, for a tubercular osteitis of the right knee. He was admitted to the Hospital for the Relief of the Ruptured and Crippled at the age of six with slight flexion deformity and two discharging sinuses. The treatment was local and constitutional. The flexion deformity was corrected by manual force under an anæsthetic. At the age of ten there were 6 inches of shortening. At present there were 9½ inches, 6 inches in the femur and 3½ in the lower leg. By tilting his pelvis he walks quite well with a 7½ inch patten despite the bow-leg on the right side and the absence of motion at the knee. The bow-leg deformity has increased of late years and is now well marked. This and knock-knee deformity were both liable to occur unless protection was given to the knee for a considerable time after the operation of excision.

The second patient was a boy of nine years, whose left knee was excised in Germany. On admission to the Hospital for the Relief of the Ruptured and Crippled, when he was eight years of age, there were 65 degrees of flexion deformity and slight mo-

tion. The flexion was easily reduced by manual force to 20 degrees with less than 10 degrees of motion. His right femur was 11¼ inches long, his left 10, his right leg 13 inches, his left 12. The shortening was a trifle over 2 inches. He illustrated the ordinary form of flexion deformity and also the fact that bony union did not always occur. He was wearing a Thomas knee brace with straps attached to the foot-plate and these fastened to buckles and adhesive plasters applied to the leg below the knee. Continual traction was thus made and the knee was slowly but surely being straightened. It was needless to add that for this traction to be efficacious in reducing the deformity it should be continuous and carried to the full limit.

Dr. R. Whitman added foot-drop, from division of the external popliteal nerve, as a possible disability following excision of the knee. He had seen two cases in which the nerve had been divided, either during excision or else during previous treatment of an abscess. One of these patients had 4 inches of shortening and knock-knee, but his most serious disability was caused by the foot-drop which necessitated a special apparatus. The cause of this nerve should be borne in mind in all operations about the knee.

Dr. R. H. Sayre said that operative surgeons were too prone to think that supervision of a case might cease with healing of the wound, whereas they would learn, if they followed their results for several years, that relapses were very frequent in cases that were not protected for long periods of time after operation. This was especially true, not only in excision but also in club-foot and various rachitic deformities. In using the Thomas splint with a foot-plate to prevent dropping of the anterior part of the foot he thought that friction and the pressure of the foot would prevent the foot-plate from sliding on the rods and would thus interfere with the straightening of a bent knee or the relieving of an inflamed knee from pressure. He preferred to keep the toe up by pulling down the heel by a strap fastened to the bottom of the splint and buckled to the back of the heel of the shoe.

Dr. Townsend said that the foot-plate on the Thomas knee brace was intended only for patients who were not walking and when there is no danger of injury being done by jarring. The leather traction strap was used for walking patients.

Dr. A. B. Judson said that these deformities were simple in kind: lateral bending which caused knock-knee or bow-leg and antero-posterior bending, producing flexion or hyperextension. The mechanical treatment was also simple, consisting of the application of pressure and counter-pressure in such directions as to oppose the deformity. If the patient was walking much of the force thus applied laterally would be absorbed in helping to sustain weight instead of being used against the deformity and the recumbent position or an ischiatic crutch would have to be considered. Patients deformed after excision did not readily submit to tedious mechanical treatment which, if it had been prescribed at first might have led, in due time, to recovery without deformity. Formerly the established treatment for white swelling of the knee was amputation. Then the high water mark was found in the conservative operation of excision. We now, however, had a more perfect conservatism in mechanical treatment, which avoided the reproach of being mere expectation because it gave to the affected part a new and radically different environment, taking the limb from its laborious position under the weight of the body and giving it pendency and rest.

Dr. V. P. Gibney said that if the case was desperate enough to demand excision then amputation was the preferable operation. He had been forced to this conclusion by many years of hospital out-patient observation. The high ungainly pattens supplemented by springs for the legs to protect the ankles did not compare with an artificial limb either practically or cosmetically. He would ask the author of the paper whether a patient with extreme shortening following excision would not be better off in after-life if an amputation were done. After the leg was straightened in these cases the patients were sure to return later for treatment. He would amputate and apply an artificial limb, especially when the patient was as old as the fifteen year old boy who had been exhibited.

Dr. Townsend said that if the patient referred to were a man instead of a boy he would advocate amputation. For himself, if he had such a leg and were rich enough to have a new artificial leg every three or four years, he would much prefer to have the leg amputated than to wear such a heavy apparatus.

Dr. Sayre said that if the amputation should be thought best on account of the great shortening of the leg after excision,

it would be best to amputate above the knee and so gain the advantage of a movable knee-joint. But it would often be wiser to fasten an artificial limb to the patient's foot when in a position of marked equinus than to do a Syme's or Pirogoff's amputation. He recalled a case in which there had been a failure of growth in one femur with shortening of 9 or 10 inches, all the joint motions being perfect. The patient wore an artificial leg attached to his foot and walked with hardly any limp, the difference being noticed only when he was seated, the knees then being at different heights above the floor.

Dr. Judson said that the apparatus referred to was very useful, but that generally it could be improved by making a firmer pocket for the reception of the foot as it inclined downwards in extreme extension. This part could be made not only extremely firm but also adjustable at will by the use of webbing and buckles. The apparatus could also be improved by making it strong enough to transfer a part of the weight of the body from the anterior part of the foot to the tibia near its tubercle, as was done in the ordinary brace for talipes calcaneus.

Dr. Townsend said that people walked better when the limb was amputated below the knee, but of course this applied to persons with a movable knee. When the femur was shortened several inches and the knee anchylosed an amputation of the thigh would have to be done in the lower one-third of the femur and by so doing a movable knee could be obtained.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Meeting of November 8, 1898.

Frederick A. Packard, M.D., President.

CONGENITAL CARDIAC DISEASE.

Dr. S. McC. Hamill showed a boy aged six years in whom there was a very strong systolic thrill with a loud, low-pitched, distinctly limited systolic murmur in the second left interspace. There was scarcely any hypertrophy of the left ventricle. The right border of cardiac dulness extended an inch and a half to the right of the right edge of the sternum.

The child had not been cyanotic at any time during his life and there was no clubbing of his fingers. The condition was

thought to be due to a congenital narrowing of the pulmonary orifice.

Dr. D. J. Milton Miller.—I do not think that there is any question that the physical signs point to pulmonary stenosis. The only question is as to its origin. There is a possibility that it is not congenital, but so long as there is no history of any illness that might have caused it, I think we must accept the lesion as of such origin.

Dr. J. P. Crozer Griffith.—The doubt naturally arises whether this is a case of congenital stenosis, because of the absence of cyanosis. Morton Stille, in a classical article published years ago, analyzed a long series of cases of congenital heart disease and found in every case where there was decided cyanosis that pulmonary stenosis was present, and conversely where pulmonary stenosis was present cyanosis was present also. He was among the first to point out that congenital cyanosis was not due to the mixture of arterial and venous blood, but to some obstruction in the pulmonary circulation, such as pulmonary stenosis. If the murmur in the child presented is due to pulmonary stenosis the question arises, if Stille is correct how can it be that he has no cyanosis at all. However, it is often difficult, and often even impossible to base a diagnosis of stenosis upon the character of the murmur, especially when we remember that only about 5 per cent. of cases of pulmonary stenosis, as seen at autopsy, are pulmonary stenosis alone, and that the others are all instances of combination with some other lesion. I think it is probable that this boy must have some other lesion present and that this lesion is, so to speak, so compensatory that his pulmonary circulation goes on properly in spite of his pulmonary stenosis, and that therefore cyanosis is absent. The most frequent combination of lesions is that of pulmonary stenosis with perforate sentum ventriculorum, often, too, with patulous ductus arteriosus. Of course such a combination as that would permit the blood to reach the lungs in a fairly satisfactory way, but even then it is puzzling to know why he has no cyanosis.

THE WEIGHING OF INFANTS.

Dr. J. P. Crozer Griffith read a paper upon the weighing of infants in the first two years of life, with the exhibition of a new weight-chart. He reviewed the published tables of weight

of Bouchard, Ouetelet, Fleischmann, Camerer, and others, depicting them, for convenience of comparison, in the form of plotted curves upon a single wall chart.

He exhibited the weight-chart devised by himself, and which he had had published for general use. He then reviewed the investigations made upon the physiological loss in weight during the first days of life, and showed in a single wall chart plotted curves of this loss, according to the studies of different observers. Finally, he laid stress upon the necessity for systematic frequent weighing and recording of the weight of every infant.

Dr. Scott.—Dr. Griffith's chart is easy for the mother to handle and for the doctor to interpret at a glance. I have recently been attending a child in which the weight coincided exactly with the line on the chart.

Dr. E. E. Graham.—The rule that a child has double its birth weight at the fifth month and triple at from the twelfth to the fourteenth month makes a very good useful working record. Dr. Griffith did not mention in his paper the fact that the weekly gain in weight assists in diagnosis. At my clinic at the Jefferson the scales are used for children under the age of one year very much more frequently than is the thermometer and very often give more assistance in arriving at a diagnosis than does any other single factor. In cases of malnutrition, for instance, in which the change in the child's appearance from week to week is very slight, and in which the question of tuberculosis occurs, in which the child has enlarged glands, and but slight, if any, fever, and in which the disorder of digestion is not in itself sufficient to account for the wasted condition, children of perhaps ten months of age, but not weighing more than ten or twelve pounds, I have come to the conclusion that if a child gains a few ounces from week to week it will recover. I am unable to decide at times until the child has been weighed whether the case is malnutrition following indigestion or whether it is one of malnutrition associated with tuberculosis, and if after two or three weeks of modified milk treatment with appropriate treatment devoted to digestion, the child does not gain in weight the diagnosis has in my experience almost always been tuberculosis and not to malassimilation connected with indigestion.

Dr. D. J. Milton Miller.—I desire to refer to two points: One is as to the average weight of a child at the end of the first year. I am glad to see that Dr. Griffith puts the average above that of most accepted charts, particularly Holt's, which I believe is the most widely accepted in this country, and in which the weight at one year is placed at 20 pounds. I have in my hand the records kept of three children, one of them now a child of nine years of age. One child daily for six months was weighed, and then weekly, until the close of the first year; the other two children, until they were two years of age, were weighed every week. These were all children in good circumstances in private practice. I can only account for the low average generally given by the fact that the weights are those of hospital children. In my cases one child weighed at birth 7 pounds; this child was fed on the breast ten months, and then artificially fed, and weighed at the end of the twelfth month 22¾ pounds. The second child was fed artificially from birth. The first child was a girl, the second was a boy. At the end of the twelfth month the boy weighed 22 pounds, 5 ounces. The third child, a girl, who was breast fed until the sixth month, and, after that, artificially fed, weighed at the end of twelve months 22 pounds, 10 ounces. The very striking agreement of these figures is interesting and instructive.

Another point I would like to call attention to is that it is necessary not to weigh the child too often. If a child is weighed every day it is remarkable what variations will occur. I have the record of a child whose weight was taken every day for six or seven months. The child gained 2 ounces one day and next day would gain nothing, then next day a quarter of an ounce, then 3 ounces, or perhaps it would lose; but at the end of a week the child would gain 5, 6 or 7 ounces. These variations continue all through the first year. So if a very anxious mother weighs her child every day she is apt to be alarmed, and even a very anxious physician may be much disturbed by these variations. They occur even in weekly weighings. A child apparently in good health will sometimes not gain at all for a week or so. My observations also corroborate the fact that a child born with a weight below the average has weekly gains above the average until the proper weight for its age is made up. For instance, a child with a birth weight of 5¾ pounds gained at the end of the eighth day one-half ounce, then, in a series of

weeks, varying amounts, 9 to 12 ounces, far above the average for the normal child. Holt makes the normal weekly average at least 4 ounces, and I think Starr says the average daily gain is three-quarters of an ounce, making 5 ounces a week. I think there is no doubt that the use of the scales is the only such index we can have for the proper growth of a child. The mere fact that a child increases in weight is not, however, a proof that it is thriving. It is well known that rhachitic children are often enormously fat, and may gain constantly in weight, but at the same time be suffering from poor nutrition. The same may be said of those fed largely on the carbohydrates.

Dr. J. P. Crozer Griffith.—I would emphasize what Dr. Miller has said as to the variation seen from day to day. Vierordt has some charts illustrating this vividly. The only time when I have a child weighed more than once a week is when the question of diet is a very urgent one, and I wish to know before a week is up whether the child is losing or not. The matter, too, of the loss of weight in the first week of life is very interesting and confusing. The recorded observations have been made in different ways. One investigator has weighed the children twice a day for the first week or ten days, and another only once a day.

One observer's custom was to weigh a child as soon as born. If this occurred before midnight the second weighing was made in the morning. But if the birth took place after midnight the second weighing was delayed until the second morning. This could but give divergent results in the weights for "one day old." And since all investigators have got fixed hours in the day-time for the weighing, and have followed different methods, this may help to explain why there are such variations among the charts for the first ten days.

CONVULSIONS IN CONGENITAL HEART DISEASE.

Dr. Frederick A. Packard reported a case of carbon dioxide convulsions from congenital heart disease. The case occurred in the person of a six weeks old white baby with spina bifida. Convulsions began at two weeks of age, were always preceded by crying and cyanosis, which latter gradually deepened until just before the convulsions came to an end. Oxygen inhalations frequently seemed to prevent the convulsive movements after cyanosis had begun and had a favorable influence upon the de-

veloped spasms. Death occurred from exhaustion after seventy-eight convulsions. At autopsy, there was found a patulous ductus arteriosus and foramen ovale.

Dr. S. McC. Hamill.—Dr. Packard's case illustrates the fact that extensive lesions admitting of the admixture of venous and arterial blood can exist without giving rise to cyanosis and other evidences of a congenital lesion, such as clubbing of the fingers, etc. These facts show that their existence is not necessary in my case in order to make sure the diagnosis of congenital pulmonary lesion. I recall a case that came to autopsy in the Philadelphia Hospital during my residence as interne; a man aged seventy-five years died of pneumonia. At the autopsy there was discovered a patulous foramen ovale that had never given rise to any symptoms during life. The heart was of normal size and the condition had not been suspected.

Malingering in Children.—Cases of this kind, Dr. O. T. Ferris believes are liable to be misunderstood, and may for a long time remain wrongly, and therefore unsuccessfully, treated. The moral disease, and the moral treatment which it demands, are overlooked; while all efforts are directed to the cure by drugs of a simulated or enormously exaggerated ailment, to which it becomes the chief object and only habit of the patient's life to call the attention of sympathizing spectators by more or less sensational demonstrations. "It is difficult," says West, "to assign any sufficient reason for this conduct. Mere indolence seems sometimes to be the chief motive for it; often vanity; the sense of importance in finding everything in the household arranged with exclusive reference to itself appears to have led to it—a feeling which may sometimes be observed to be very powerful even at an exceedingly early age. In many instances a morbid craving for sympathy is mingled with love of importance, and both these sentiments are not unfrequently gratified and exaggerated by the conduct of a foolishly fond mother. Real illness, however, in almost all these cases, exists at the commencement though the child persists in complaining of its old symptoms long after their cause has disappeared."

Current Literature.

MEDICINE.

Tubby, A. H.: On the Occurrence of a Pad on the Dorsum of the Foot in Rickets. (*British Medical Journal.* 1898. No. 1972.)

In the course of examining a large number of rickety children the author was much struck by a peculiar appearance on the dorsum of the foot, and occasionally of the hand, but more often seen on the foot. He believes that this appearance has not hitherto been described. It is well known that in infants the dorsum of the foot is somewhat prominent and the soft tissues are fuller, but the appearance and feel of this part are totally different in healthy and rickety children. In the latter, the soft tissues are decidedly thicker than in healthy children at this spot, and the swelling may be a flattened elevation or dome-like. Its color is that often seen in the skin elsewhere in rickets, and may be compared to that which would be produced by the injection of white wax, slightly tinted to a yellowish shade, beneath the skin so as to give it a distinct tint and a semi-transparent look.

As to the consistency of the swelling, if in a healthy child the skin of the dorsum of the foot be pinched up between the fingers, it can be moved independently of the subcutaneous tissue; but in many rickety children skin and subcutaneous tissue are quite inseparable, and only a more or less thick fold composed of both can be made. It appears in many cases as if solid œdema were present in the skin and subcutaneous tissue.

The pad, however, is not due entirely to changes in the subcutaneous tissue, but in some cases originates in swelling and thickening in the neighborhood of the epiphyses of the metatarsal bones; hence the pad is more frequently seen rather towards the anterior than the posterior part of the dorsum. When the bones are so affected, distinct beading may be felt about the epiphysial lines, and doubtless the perichondrium and periosteum are thickened as well. But to return for a moment to the consistency of the swelling. In early cases of rickets it is often semi-fluid. In cases of a few months' duration it is semi-solid, and in those of more than a year's duration it is hard and resistant.

The author tabulates 100 cases of rickets. It was somewhat difficult to fix the date of onset of the attack, so he asked the mother the following questions: When did the child's head begin to sweat at night persistently? When did he cry as if he were tender all over? When did he appear to be weak in his back and to go off his legs? When did the motions become evil-smelling and the abdomen to swell? By carefully noting the answers to these questions—some, of course, being in the negative—it has been possible to fix the date of the onset of the attack with some degree of accuracy. Taking one hundred tabulated cases of rickets, 86 had dorsal pads and 14 none. The 86 have been divided into three classes:

(*a*) Those children in whom the pad was marked, but was semi-fluid, and no affections of the bones could be felt. Of the 86, 20 cases came under this category, the average age being 17 months and the duration of the rachitic attack 2 months. This statement bears out another observation, namely, that before the signs of rickets are seen or felt in the bones, the skin and subcutaneous tissues generally are affected, being puffy and of a tallow-candle appearance.

(*b*) Those in whom the pad is well-marked, nearly dome-shaped, and solidly œdematous to the touch. Of the 86 cases, 49 presented this appearance; the average age was 27 months, and the average duration of the attack was 11¾ months.

(*c*) Those in whom the thickening was mainly bony, the swelling being of a firm, hard, resistant character, and beaded. Of the 86 cases, 17 came into this category, their average age being 4 years, and the duration of the disease 27 months.

Although only 100 cases have been tabulated, yet a very large number of other cases have been examined and have appeared to bear out the preceding observations, and to indicate that if cases be watched over a long period the pad goes through three stages, namely, semi-fluid and confined to soft tissues, semi-solid with some implication of the bones, and firm, resistant and irregular, due entirely to the fact that the bone lesion is the last to disappear.

In conclusion the author advances the following points:

1. In a large proportion of cases of rickets the feet show definite dorsal pads, and in a smaller proportion of cases the same appearance is seen on the backs of the hands.

2. This pad is of varying consistency and origin.

3. If the disease be of recent duration—that is, two to six months—the thickening is subcutaneous and is semi-fluid.

4. If rickets have existed from six to eighteen months, the pad is best marked, and is made up of thickened subcutaneous tissue and periosteum and overgrown epiphyses.

5. At a period of eighteen to thirty-six months after the onset of the disease, the subcutaneous pad disappears concurrently with the general flabbiness and undue pallor of the skin, and leave the bony changes well-apparent to the touch.

Carmichael, James: The Clinical Types of Infantile Pneumonia. (*British Medical Journal.* 1898. No. 1972.)

The author divides the pneumonias of infants into four distinct clinical types:

(*a*) Complete consolidation, with lobar distribution and absence of signs of bronchial catarrh.

(*b*) No sign of consolidation; bronchial catarrh generally distributed over one or more—frequently both—lungs.

(*c*) Bronchial catarrh, with small areas of incomplete consolidation, lobular distribution.

(*d*) Bronchial catarrh, with larger areas of incomplete consolidation; lobar distribution.

The first form or type (*a*), the true fibrinous or croupous variety, is distinct, and definite both in its clinical relations and pathology. The main factors are complete consolidation, sudden invasion, rapid crisis in from seven to ten days, symptoms not always proportionate to the degree of lung involvement, but rather to the toxæmia.

Type (*b*): Clinically the features are those of bronchial catarrh, involving the minute bronchial ramifications (capillary bronchitis). The type of fever is similar to the other varieties of broncho-pneumonia. No evidence of lobular involvement can be made out by physical examination. *Post-mortem* examination shows catarrhal inflammation of alveoli and smaller bronchi.

Type (*c*): Signs of bronchial catarrh, sometimes chiefly confined to one lung, often to both; small areas of incomplete consolidation (lobular distribution). The type of temperature is irregular compared with the fibrinous form; the onset is gradual, not sudden, the duration of the disease from 10 to 14 or 21 days, ending by lysis, rarely but occasionally by crisis. The pneumonic areas can only be detected with certainty by the

stethoscope, percussion being unreliable. The auscultatory signs are limited areas of broncho-vesicular breathing, with increased crying resonance and crepitations heard both during inspiration and expiration finer than those heard in the bronchi over the other portions of lung.

Type (*d*): Signs of bronchial catarrh, with larger areas of incomplete consolidation. These cases usually are classed under the "mixed type." The auscultatory signs are similar to those of the former type (*c*), with this difference, that the percussion is impaired in proportion to the extent of lung involved. The note shows dulness, not so absolute as in the fibrinous form, as the lung is more or less vesicular. Of 142 hospital cases 107 showed the clinical features of broncho-pneumonia of various types, 35 showed all the features of the fibrinous form. This accords generally with universal experience, showing that the acute pneumonia of infancy and early childhood is a broncho-pneumonia in the majority of cases.

The infections being the same, why should the disease assume the form of broncho-pneumonia in the child and fibrinous pneumonia in the adult? Infection (micro-organisms) attacks the most vulnerable tissues, those possessing the least immunity. Recent investigations on the anatomy of the fœtal lung at a late period show that at this time the alveoli have not appeared, the ultimate bronchial ramifications end in a loose connective tissue, which later on becomes thicker and stronger, and in which the vascular network is distributed. Over this, flat epithelium becomes developed, and can ultimately be differentiated from the columnar variety lining the minute bronchial ramifications. It is not until the fourth or fifth year of extrauterine life that the delicate tissues constituting the alveoli of the lung become fully developed. Prior to this time the air cells are relatively smaller than in the adult, their walls thicker, and the interstitial tissue larger in amount. The blood vessels of the alveolar walls are also very abundant. The connective tissue cells in the stroma, and also the epithelial cells, are very numerous and readily proliferate. Such being the anatomical conditions met with in the infantile minute bronchial tubes, alveoli, and interstitial tissues, the presumption is that these growing and immature tissues possess less immunity to the inroads of infective micro-organisms than the fully-developed structures of the adult lung.

Carmichael, James: The Pathology of Pneumonia in Children. (*British Medical Journal.* 1898. No. 1972.)

True fibrinous pneumonia, the author says, although relatively rare in infancy, is met with in a minority of cases. The appearances show solidity of the lung with lobar consolidation. The air cells are filled with fibrinous exudate containing red and white blood cells and desquamated epithelium. Pleurisy is present. The cut section of the lung shows a smooth solid surface.

Very different are the appearances in catarrhal pneumonia. The lung in this variety is vesicular; the cut surface shows isolated lobules or groups of these, prominent, and of a purplish color, which soon become scarlet on exposure to air. On squeezing the lung catarrhal fluid exudes from the smaller bronchi. Microscopical examination shows the air cells filled with muco-purulent fluid and cellular elements. The cells are found to be germinating epithelial cells, which are rapidly thrown off from the alveolar wall, filling up the air cells. The older epithelial cells rapidly undergo fatty degeneration. The pathological process is essentially a catarrhal one. While these morbid appearances in the two forms alluded to are sufficiently distinct, the true fibrinous pneumonia, showing little variation in its different stages; in the catarrhal variety the appearances vary according to the duration of the process and the time the child has lived. When life has only been prolonged for a few days the appearance of lobular involvement is less distinct, the evidence of bronchial catarrh alone being well marked with a congested, sometimes slightly œdematous, lung.

In many cases in a more advanced stage the lung shows evidence of more or less consolidation in large areas, a process of splenisation having taken place with some fibrinous exudation into the lung tissues. On microscopical examination in these cases the proof of this is shown by the exudation of red and white blood cells, which crowd the alveoli and lung tissue. Numerous blood extravasations may also be met with beneath the pleura. These appearances characterize what is termed the mixed form of the disease where fibrinous and catarrhal changes are combined.

Ott, Lambert: Nocturnal Manifestations of Disease in Children. (*Medical News.* 1898. Vol. lxxii., No. 25.)

In this paper the author does not consider diseases which occur only at night, but rather such evidences of ill health as occur during sleep when the physician is rarely present. His attention is apt to be misled by other symptoms which are visible during the day, while the mother fails to detect the cause of the child's restlessness.

THREAD- OR PIN-WORMS.—Often these are overlooked unless the mother is directed to examine the child's anus or vagina under a good light. These parasites are a most prolific cause of restless sleep in children, as they migrate when the body is at rest, and, creeping over the sensitive mucocutaneous junction of the anus, cause the little one to toss about. So simple a cause of restless sleep is easily overlooked in our search for some complicated conditions. The remedy is cold salt-water injections repeated several times in the same evening, as the first injection opens the bowels and the succeeding ones kill the worms. This treatment should be continued during a period of ten days or more or the parasites will again appear. Internal medication, such as santonin and calomel three times daily act well with the injections.

NOCTURNAL HIVES.—Few physicians think of this condition as a cause of restless nights in children. The author's attention was called thereto in a child in his own family. A little boy, five years of age, about midnight began tossing and moaning in his sleep, which was at first attributed to late eating of indigestible food. Despite correction of this the restlessness continued, and not finding any of the usual causes, during one of his most severe attacks, he removed all of his clothing; he discovered three large nodular hives on different parts of his body to which he carried his hand in his sleep in an effort to scratch them. By restricting him to milk and farinacious food, saline laxatives, tonics, and sponging with alcohol he gradually improved. More than one or two blotches may not be found, and at no time the multitude observed in adults when suffering with an acute attack of urticaria. The treatment consists in removing the cause, if ascertained, and the use of gentle laxatives, careful dietary, and sponging with alcohol.

NIGHT TERRORS in children is another peculiar manifestation especially in those of the neurotic type. The attack is preceded

by some restlessness; suddenly the child sits up in bed and screams, even shrieks, in a state of terror and no matter who approaches the bedside, even the mother, is not recognized, nor does the child recover from the fright until several minutes elapse, or until violently shaken out of the terrified sleep. When subdued and comforted by the presence of his mother he offers no explanation nor can he give one when requested, but falls back quickly into sleep. If questioned the next morning he cannot recall the event, nor does he remember having repulsive dreams.

NOCTURNAL OR UNCONSCIOUS MASTURBATION.—However strange this condition may seem it is not an uncommon occurrence. The ordinary form of nocturnal masturbation in young children is by pulling at an elongated prepuce prior to falling to sleep and during the early morning.

After considering nocturnal enuresis, functional spasm, and nocturnal driveling, the article concludes with some statement regarding nocturnal pain.

NOCTURNAL PAINS.—Pains occurring during sleep and having such causes as an affection of the teeth or ears, create, in addition to restlessness, all manner of audible expressions, such as groaning, crying, or even shrieking. The causes of simply restless sleep are usually irritative, without pain, while causes producing restlessness with sleep broken by spells of crying out are most always due to pain. A child suffering with toothache or earache cries out in exacerbations and during remission of the pain again sleeps until disturbed by a recurrence of the pain. An earache sufferer during sleep will bore the head in the pillow, carry the hand to the affected ear, and unconsciously lie on the healthy ear in order to relieve pressure. Older children are able to state the location of their pains, but in younger children we have to depend upon objective symptoms entirely. Some pains in children while awake are annulled by the intense diversion at play, but as soon as they lapse into the calm quietude of sleep a subdued pain is more forcibly impressed upon the sensorium. Occasionally the joint pains of scurvy are nocturnal and only discovered during sleep.

Still, George F.: Simple Posterior Basic Meningitis in Infants. (*British Medical Journal.* 1898. No. 1972.)

This is a non-tubercular form of meningitis which occurs mostly within the first year of life and effects especially the

posterior portion of the base of the brain and also the spinal cord. It is not a rare condition. The author divides the cases into three groups: (1) Those fatal within six weeks—that is, during the acute or inflammatory stage; (2) those fatal at the end of three or four months—that is, during the chronic or hydrocephalic stage; (3) those in which recovery occurs.

Corresponding with these variations in the duration of the disease, there are differences of pathological appearance in groups (1) and (2). In the former there is much lymph over the base of the brain and on the spinal cord, in the latter there may be no trace whatever of lymph, only thickening and opacity of the pia arachnoid, with adhesions especially between the medulla and cerebellum. These are briefly the morbid changes found, and it is important that it should be realized that there are such differences in the morbid anatomy of this disease in its early and in its late stages. In the early stage the condition has not been sufficiently differentiated from what one might call "secondary" suppurative meningitis, particularly the common form due to the pneumococcus. In the late stage it has almost certainly been labelled sometimes as healed tuberculous meningitis, sometimes as a chronic syphilitic change.

The author lays great stress on one negative point in its morbid anatomy which is curiously constant and characteristic. In the simple posterior basic meningitis of infants it is almost invariably the case that no lesion, except such accidental complications as occur in any prolonged disease during the last few days or hours of life, is found in the viscera; whereas in other forms of meningitis exudation in the meninges is almost invariably secondary to some obvious focus of infection elsewhere. In fifteen consecutive cases of suppurative meningitis which he examined, all except one, in which there was doubtful pneumonia, showed an obvious primary focus of infection, empyema being the most common.

In fifteen consecutive cases of posterior basic meningitis which he examined not a single case showed any inflammatory lesion elsewhere, excepting two cases in which a lymph exudation about certain tendon sheaths was found.

The middle ear in these cases, as in the vast majority of children who die of any disease lasting more than a few days, contains mucopurulent secretion, but he has never seen a case of posterior basic meningitis in which there was any bone dis-

ease in connection with the ear, or any evidence whatever of extension of inflammation from the ear, and the same may be said of the nose.

Simple posterior basic meningitis, therefore, differs markedly from other forms of meningitis in its morbid anatomy and this fact, together with the constancy of its clinical and pathological features, seems to point to its being a specific disease due to some micro-organism. In seven out of a series of eight cases reported last year, he found a diplococcus, which, so far as the evidence went, appeared to be the specific cause of the disease. The one case which proved sterile died three and a half months after the onset of the disease.

He has since then made four *post-mortem* examinations of infants with this disease, and in two of these the micro-organism was present in the exudation at the base of the brain, apparently in pure growth, but owing probably to the use of strong carbolic acid for the sterilization of instruments no cultures were obtained; the other two cases died respectively on the seventy-fifth and eighty-ninth day after the onset of the disease, when all exudation had already disappeared.

In another case he has recently obtained pure cultures of the micro-organism from the cerebro-spinal fluid taken from the lateral ventricles during life, in the course of an operation for the establishment of artifical drainage. It would seem, therefore, that the micro-organism is present during the earlier stage of the disease, but disappears later. In one case, however, he obtained it in pure growth from the depths of the lateral ventricles as late as the 103d day.

Hutchinson, Jonathan: A Discussion on Some Aspects of Congenital Syphilis. (*British Medical Journal.* 1898. No. 1972.)

Mr. Hutchinson said that he did not think he had anything new to communicate on the subject, but possibly the negative rather than the positive information which he had been able to accumulate during twenty-five years would not be without interest. This concerned the relative frequency of late manifestations of hereditary syphilis.

Regarding diseases of bone in children affected with hereditary syphilis, he had lately seen a good many cases of that variety, somewhat resembling osteitis deformans, characterized

by great enlargement and bending of the bones. As regarded syphilitic keratitis the facts remained the same. It was a remarkable phenomenon that in some few cases the keratitis might be deferred as long as thirty or forty years, but the explanation of this very late manifestation probably lay in the development of the tissues and not in an actual recrudescence of the disease. As regarded the simultaneous affection of joints, this always occurred in young patients and never in those over twenty years of age. Neither did deafness occur at a late period. Gummata and other syphilitic affections of the tongue were also exceedingly rare as a result of hereditary disease, but he had recently seen a most typical example in a young woman of thirty-three whom he knew to have been the subject of hereditary taint. In this case the gumma was in the tongue and disappeared in six weeks under potassium iodide.

As regarded affections of the nervous system, it was perhaps rather more common to find degenerative changes late in adolescent life. He had seen several cases in which there was a condition of partial idiocy. Mr. Hutchinson referred to a remarkable case in which there had evidently been some damage to the brain in the infantile period. The subject was affected with a curious partial word blindness, and though his mind was absolutely unaffected, he could never learn to read. His sight also was very bad, though this alone did not account for the condition. As regarded all forms of chronic skin disease occurring after infancy with the exception of phagedænic lupus there was no reason to attribute them to congenital syphilis.

Chronic forms of lupus, psoriasis, and such-like eruptions, did not occur. These few accidental symptoms he had mentioned were the only ones known to occur; otherwise the subjects of infantile syphilis had excellent health in later life, and in most it was impossible to recognize that they had suffered from the disease in early life.

As regarded the marriage of the subjects of hereditary taint there was nothing to prevent it. The evidence was strongly against the transmission of disease to the third generation, and was so improbable that they were justified in believing it to be impossible.

As regarded certain difficulties of diagnosis, there were so many fallacies to guard against that if a thing were improbable or rare, it was better to doubt its existence than to be misled

into thinking it was of more common occurrence than the facts warranted. He wished strongly to insist on the fact that there was very little bad health in the general population which could be attributed to hereditary syphilis. Of late years his own practice had been mainly among the richer or more special classes than among the poor. The more pronounced among such cases were often brought to him, and he had seen much disabling disease; still he wished to take this opportunity of expressing his emphatic opinion that the popular fear of the hereditary disease was very much exaggerated. Owing to the social considerations depending on the view taken in this matter, it would be extremely unfortunate if the medical profession and others should take up an alarmist position which was not based on the true state of the case. For his own part, he believed in no preventive measure except the promotion of marriage. As regarded the time of marriage for syphilitics, he thought two years was a sufficient interval. A period of longer waiting might only produce more unhappy results than it would prevent. It was true that congenital syphilis was transmitted in some cases after two years and, especially if the mother were diseased, might be transmitted indefinitely; but it was rare, even if the eldest child suffered from it, for the younger children of the same family to do so. In a few cases one or more children suffered, but he believed that the taint did usually die out even when both parents were affected. He thought that there were very many apparent cases in which the diagnosis was really not correct, and depreciated any diagnosis being made only from the condition of skin eruption shown by any given infant. Fallacies were very numerous, and unless there was corroborating evidence or history, it was unwise to trust to this sign alone.

Manicatide : Pyocyaneus Infection in Childhood. (*Jahrbuch für Kinderheilkunde.* B. xlv., H. i.)

In the healthy individual, the bacillus pyocyaneus is found as a harmless parasite on the skin in the axilla, and in the anal and inguinal regions. In a few instances, the bacillus has been found in the saliva, stomach, and bronchi. Associated with other micro-organisms, it has been found in wounds, in the sputum of septic pneumonia, in abscesses, and in the pus of tubercular or pneumococcus otitis. It would thus appear that the pyocyaneus

bacillus is not limited in its scope of operation, but under favorable conditions, it may participate in a general poly-microbic infection.

Various writers report having found the bacillus associated with the bacterium coli-streptococcus and staphylococcus. Gruber and Rohrer found the bacillus in pure culture in middle ear disease, and in panophthalmitis.

Kruse and Pasquale found the bacillus also in pure culture in two cases of idiopathic abscess of the liver. A general pyocyaneus infection until recently was only thought possible in the animal world. Recent observations, however, show that a severe infection may take place without the association of other micro-organisms. Two such cases were recently observed by the author. An infant fourteen months of age was brought to the clinic on account of a chronic gastro-intestinal disorder which had lasted about forty days. After one month of treatment the child recovered, but was very weak. Suddenly he was taken with severe cough, high fever, and died with symptoms pointing to broncho-pneumonia. At the autopsy, attention was called to the peculiar yellowish-green color of the skin. There was marked injection of the mucous membrane of the larynx which parts, and the trachea, were covered with a mucopurulent secretion. Some of the small glands of the periosteum were tubercular, although there were no tubercular changes in the lungs.

The lungs showed a small area of broncho-pneumonia. The spleen was enlarged and showed parenchymatous degeneration. The kidneys showed slight thickening of the cortecal portion. The mucous membrane of the intestine was pale, with a few hemorrhagic areas.

Bacteriological examination of the secretion from the mucous membrane of the larynx revealed the presence of the bacterium coli, the streptococcus, the staphylococcus areas and the bacillus pyocyaneus. In the pneumonic areas, the pneumococcus and the bacillus pyocyaneus were found. In the spleen the bacillus pyocyaneus was present in pure culture. In the liver the bacillus pyocyaneus was associated with the bacterium coli. The kidneys and the blood from the heart showed the pyocyaneus bacillus in pure culture.

In this case the sudden onset with fever and prostration, sign of an infection without any definite lesion, together with the pe-

culiar coloring of the skin, instigated the author to search for the cause.

The second case was a boy four years of age who had been injected with antitoxin and was recovering. He suddenly developed a high fever, prostration, and a pustular rash. The patient died in a few days. Bacteriological examination revealed the presence of the bacillus pyocyaneus in nearly all the organs.

HYGIENE AND THERAPEUTICS.

Peterson, Frederick: Beneficial Effects of the Withdrawal of Bromides in the Treatment of Epilepsy. (*New York Medical Journal.* 1897. Vol. lxvi., No. 13.)

The bromides constitute in the hands of most practitioners the sole remedy employed. They have, because of their undoubted usefulness in many cases, superseded most other drugs as an antispasmodic. The unfortunate epileptic is too often dismissed as a case it is hopeless to attempt to cure. He is, nevertheless, given the bromide treatment and advised to continue it indefinitely. This the patient does, and as a result becomes after a time saturated with the drug, and presents sooner or later the symptoms of bromine intoxication—viz., bromide acne, chronic ulcers, varying degrees of mental impairment verging toward dementia, etc.

While the bromides are perhaps the most useful remedy we can employ as an antispasmodic in many cases of epilepsy, their exhibition in every case is not advisable. With a considerable number of patients the bromides are entirely ineffectual; with no small number, too, very serious symptoms, such as acute bromism, increase of seizures, and even insanity, supervene upon their use. In many of the cases where actual good is done by the bromides in reducing the frequency and severity of the attacks, the concomitant symptoms are such that it becomes questionable whether the remedy be not after all worse than the disease. The writer makes it a practice, therefore, to exhibit the bromides with caution, and never to employ them until the series of less harmful but often quite as efficacious remedies for epilepsy have been tried in vain.

But since the practice has been to give and continue the bromides for years in most cases of epilepsy, and since it is a chronic and generally rather hopeless disorder, nearly all of the

cases that come under the writer's observation for the first time, in private practice, at clinics, or at Craig Colony, are already more or less saturated with the bromides.

It has been generally taught that it is dangerous to give up the bromides in such cases suddenly, and it is a matter of common belief that the sudden withdrawal of the bromides is certain to produce status epilepticus, or at least to increase the severity and frequency of the epileptic seizures. It is the object of this brief paper to show that this assumption is far from true. There are cases in which sudden withdrawal of the bromides produces the status epilepticus, and increases the number of attacks. But such cases are not common. They are in the minority. It is the aim of the writer to demonstrate that the contrary is the rule; that sudden or even gradual reduction of the bromides in these long-saturated cases ameliorates the condition of the patient in almost every instance, that it decreases to a remarkable extent the number of attacks, that it lessens their severity, that it improves the general physical health, and that it re-establishes to a considerable degree memory and intelligence.

To prove the truth of these statements the author reports the histories of eleven patients. These histories seem to clearly demonstrate the fact that the withdrawal of the bromides in cases of epilepsy long under bromide treatment is generally followed by distinct amelioration in all of the symptoms. In some of the cases the improvement is startling. Were one to try some new remedy or method of treatment in such cases, how readily might he be deceived as to the value of his therapeutic measures!

Suppose, for instance, he were to cut the eye muscles, a procedure in vogue in certain quarters, but tabooed, by most reputable neurologists, what surprisingly satisfactory results might be reported! Such reports have been made, and the withdrawal of the bromides (to show that no treatment had been carried on to mask the results of the operative procedure) has been openly boasted of in said reports. These cases then serve to corroborate the statements intended to be made by the writer, and should be added to the list above given. The truth is that, under the circumstances, no fair deduction can be drawn from any case of epilepsy apparently improved by any method of treatment whatever when the patient has been for long periods under the bromide treatment and the bromides are withdrawn. In

order to give scientific value to any new therapeutic measure in epilepsy, it will be necessary to show that the patient has not been subjected to the bromides for a long time before the experiment in the new treatment has been undertaken.

Hanson, D. S.: The First Care of the Baby. (*Cleveland Medical Gazette.* 1898. Vol. xiii., No. 4.)

The author's teaching regarding the care of the new-born infant may be summarized as follows: 1. Do not expose the baby after birth to a greater change of temperature than is absolutely necessary. 2. Do not allow the attendants to subject him to prolonged exposure while washing, but rub him over with lard (this usually being convenient), and quickly wipe him off and wrap him up warmly. 3. Do not use too fine a thread in tying cord, and dress the same with dry, sterile dressings. 4. Give nothing but tepid water or some very weak aromatic tea until there is sufficient milk in mother's breast for child's requirements. 5. Notice clothing and see that the abdomen and chest are not constricted thereby.

Guinon: Treatment of Colitis. (*Rev. Mens. des Mal. de l'Enf.* 1898. Pp. 113, 243. *British Medical Journal.* 1898. No. 1954.)

The author distinguishes three main varieties of colitis in children—acute simple, dysenteriform, and chronic.

In the first variety, which occurs usually in hot weather, the attack comes on with fever, vomiting and diarrhœa of watery, fæcal stools. The characteristic symptoms become quickly established—colic accompanied by tenesmus, and the passage at frequent intervals of small stools which have an offensive odor, and consist entirely or in large part of mucus streaked with blood. In severe cases the pain may be so great that the preliminary purgative indicated as a general rule cannot be used. Hot compresses should be kept constantly applied to the belly; a warm bath may be given twice in the day and a single enema containing opium; by the mouth antipyrin, and if this fails to give relief chloral should be given. Milk and all solid food should be withdrawn, and the child given only broths and thin gruels, or "albuminous barley water," made by beating the white of an egg in barley water. As soon as the acute symptoms have subsided, small rectal injections of warm solutions containing

common salt (gr. ij to ℥ j) or sodium biborate (gr. j to ℥ j) should be given. Antiseptic drugs are contra-indicated owing to their irritating qualities.

In the dysenteriform the fever is higher, the colic more severe, and there is marked tenderness over the colon, accompanied by contraction of the abdominal muscles. The stools consist of mucus mingled with blood; in some cases so intimately as to resemble pneumonic sputum. In cases of this type ipecacuanha is the best remedy, given in small doses every two hours with a little opium. If after three or four days the stools have not become fæcal, a copious injection of warm solution of silver nitrate (gr. ij to Oj) should be given. If symptoms of collapse ensue, subcutaneous injections of artificial serum (physiological salt solution) should be given. As much as a pint may be injected in this way in the course of twenty-four hours.

In the chronic form the regulation of the diet is the most important point, and it may be necessary altogether to withdraw milk for some time. Particular attention should be given to guarding against constipation, which is very apt to ensue, and to lead to a fresh attack of colitis determined by the irritation caused by the retained fæces. Of drugs, calomel in minute doses, and a simple mixture of hydrochloric acid are the most generally useful. Hot baths and hot compresses to the belly night and morning are also useful.

Goliner: Treatment of Dyspepsia in Children. (*Der Kinder.-Arzt.* 1898. Vol. vi., No. 1.)

The author refers to the fact that in the mildest forms of acute indigestion in children, designated simple dyspepsia by Bednar, the child's appearance is but slightly affected, there being noticeable at most some pallor and light shadows about the eyes; vomiting follows nearly every nursing, the milk frequently returning in uncurdled condition, thus proving that the gastric juice has lost its first effect on the milk—to coagulate the casein. Soon after the vomiting attacks begin, the intestinal evacuations increase abnormally also, and there may even be no vomiting, the abnormal evacuations alone showing the presence of intestinal catarrh. The fæces become more liquid, irregular, foul in odor, and the yellow color becomes green, owing to the change of biliruhin to biliverdin, there is an accompanying flatulence. Even the most rational food, mother's milk, can be digested

only in a certain proportion to the gastric juice; any excess of the food over the limit digestible is either vomited or passes on unchanged, and reappears, after journeying through the intestinal canal, in the evacuations; the latter are thereby increased in frequency and quantity, and microscopically we can discern the characteristic milk curdle, enveloping milk globules, and containing albumen and fat. It now depends on the constitution of the digestive organs, or on the amount of non-absorbed food, if a normal condition can be gradually re-established. This disturbance of digestion and absorption can only lead to an increase of the disturbing matter, and thus through the injurious circulation, the cause of the disease is aggravated by the disease itself. The sour odor from the mouth, the mucus in the vomit, usually also sour, the fetid evacuations, the flatulence and the fetid gases expelled through the anus—all these manifestations are the clinical expressions of an anomalous chemical process.

The therapy for infantile dyspepsia has always been primarily dietetic, but the author does not agree with the current assumption that simple dietetic treatment will suffice to abort this dyspepsia in all cases. Henoch has pointed out that many cases of dyspepsia continue despite regular nursing, which is the most rational dietetic remedy. Even the favorite oatmeal gruel and thin flour-soup do not protect against dyspepsia. The frequently recommended calomel, in small doses, can only act as anti-fermentative, while it cannot be definitely claimed that it has a favorable influence on the catarrhal irritation of the mucus membranes.

Any remedy will, therefore, be welcomed that possesses decided antiseptic and digestive properties while also non-irritative and harmless. Papain, the author believes, meets these requirements. It is derived from the tropical plant, *carica papava*, indigenous in Brazil. It is a yellowish-white powder, of spicy odor and a taste akin to meat extract. Its properties are, that it dissolves albumen and fibrine, and has the advantage over pepsin of activity in neutral and alkaline liquids as well as in acid. Thus it is capable of unfolding its peptonizing power in the intestine. The author has used it largely in intestinal catarrh in infants and young children. The results were uniformly favorable. The little patients took papain readily, and in no instance was it rejected by the stomach. As a rule he ordered O. 1 gm. (1½ grains) three times daily for nursing infants, each dose fol-

lowed fifteen minutes later with oatmeal gruel or diluted cow's milk. The improvement became apparent after the third or fourth powder, manifested by increased desire for drink, subsidence of eructations, and a return to normal yellow of the evacuations. For children over one year old, it is advisable to make the dose O. 2 to O. 3 gm. (3 to 4 grains). It proved in the author's practice an excellent appetite-promoting and digestion-improving agent.

SURGERY.

Matas, Rudolph: Imperforate Rectum, Relieved by Operation but Followed by Peculiar Complications. (*New Orleans Medical and Surgical Journal.* 1897. Vol. I., No. 1.)

The case was one of congenitally imperforate rectum, with a well-formed anus, in an infant at term with restoration of the anal outlet (proctoplasty) after Kraske's operation, and convalescence complicated by whooping-cough and procidentia of the rectum necessitating excision. Recovery with partial control of bowel.

In operating an attempt was made to reach the rectal pouch by means of a long needle but failed.

A grooved director was then introduced into the anus as far as it would go without perforating the *cul de sac*, and an incision was made in the median line through the posterior anal margin to the coccyx. As nothing appeared in the wound at this stage of the operation which could suggest the appearance of the rectal pouch, the incision was carried higher up to the base of the coccyx in the middle line, and the coccyx, which was cartilaginous, was easily excised, by enucleation, without much disturbance to the soft parts. The removal of the coccyx left an opening which readily admitted the little finger for its whole length into the pelvis and greatly facilitated exploration. The lips of the wound and nates were now fully retracted and careful search made for the missing rectal pouch by dissecting the loose retro-peritoneal connective tissue. After this, a dark, brownish-green, soft mass was indistinctly recognized as the occluded rectal pouch. An attempt was now made to seize this mass with hemostatic forceps and drag it down to the edge of the perineo-coccygeal wound. As this opening was insufficient and it was evident that any forcible attempts at traction upon

the mesenteron would end in a premature rupture of the gut and an inability to form a proper artificial anus, the author decided to remove as much of the sacrum as would be required to permit of more direct exposure of the pelvic contents and permit the easy introduction of the finger or instruments into the pelvic cavity, with the view of clearing the high rectal end of its attachments, thus permitting him to drag it down to a safe anchorage at the sacral outlet.

To resect the sacrum was a very simple procedure, as the bone was still cartilaginous and could be cut through with strong, blunt-pointed scissors with less difficulty than would be experienced in cutting through heavy card board. With a few clips of the scissors a considerable fragment of the sacrum was removed up to a point corresponding with the highest level of the fourth sacral vertebra. The sacral excision was central at the coccygeal line, but became marginal and to the left as it advanced upward. A fenestrum was thus made in the posterior wall of the pelvis which permitted an easy exposure of the missing bowel and peritoneum. By gently insinuating the index between the interior surface of the sacrum and the tissues in front of it, the rectal pouch was sufficiently mobolized to permit it to appear at the sacro-coccygeal opening without dangerous traction.

The dilated anal extremity of the mesenteron was gently pulled down until it projected beyond the edges of the wound, and after securing it at opposite points with artery forceps, was freely opened with scissors in the intervening portion. A flood of meconium immediately covered the field, and continued to flow for some time afterward. In the meantime the parts were constantly irrigated with a douche of warm and weakly carbolized water.

When the intestinal contents ceased flowing the parts were again douched, and the suturing of the mucous membrane to the skin was undertaken. It was now noticed that in consequence of the evacuation of the bowel the tension of the rectal pouch had been entirely relieved, and that with very little effort it could be brought down, quite low down, in the perineal wound, and sufficiently so as to allow its apposition with the natural anus. The original anus was not disturbed for fear of injuring its sphincter muscles. The skin over the sacral region was then closed with a few silk sutures, and the mucous membrane care-

fully united to the skin immediately behind the anus in the ano-coccygeal region.

Locally, the wound progressed most favorably. The bowels moved regularly, there was scarcely any local irritation in the neighborhood of the anal margin notwithstanding the frequent contact of feces.

The whooping-cough, which was epidemic in the neighborhood at the time, and which thus manifested itself in the baby on the *fourth day* after birth, produced a marked effect on the child's general condition, and threatened the final success of the operation.

The frequent paroxysms of violent cough unquestionably precipitated a complication which would at least not have presented itself so soon after the operation. In consequence of the large pelvic outlet in the sacro-coccygeal region and the laxity of the anal orifice from weak sphincter control, the rectum began to protrude and not many days elapsed before three inches of prolapsed rectum remained constantly extruded from the anus. This prolapsus was finally relieved by amputating three inches of the prolapsed bowel.

After a careful investigation of the literature of the subject, the author finds that this is the tenth in a list of twelve cases of ano-rectal imperforation in which relief has been attempted by Kraske's method or its modifications. Of the twelve cases reported only two succumbed to causes directly connected with the operative treatment; and in one of these death was caused by peritonitis due to the infection of the peritoneum with an exploring needle previous to the sacral operation.

Eight out of the twelve cases died at variable periods, from a few days to two months after the operation, from diarrhœa, marasmus, capillary bronchitis, and other conditions not directly connected with the operation. Four of the patients survived up to the time when they were reported.

Morgan, John H.: Vesical Calculi in Children. (*The Lancet.* 1898. No. 3887.)

Regarding the treatment of this condition the author makes the following propositions:

(1) That in the cases of boys and girls stones of moderate size should be dealt with by litholapaxy; (2) That stones composed of oxalate of lime or of such size as not to be readily

grasped between the blades of a lithotrite should be removed by the lateral operation in the case of boys; and (3) that the suprapubic operation should be reserved for stones of very large size or inconvenient shape in boys or girls, or cases of calculus embedded in a saccule of the bladder or impacted in the mouth of a ureter. That these propositions are not absolute must be evident. Cases have occurred to the author and others where the lithotrite could not be introduced owing to some puckering of the mucous membrane of the urethra and the lateral operation may be forbidden on account of a narrowed and rickety pelvis, but the tendency of surgeons is, when possible, to use the lithotrite instead of the knife, and with proper care such a course is followed by the best results and is free from the after-consequences of a cutting operation. At the same time it is not every surgeon who has had experience of the use of a lithotrite and to such must be left the choice of one of the other operations. In girls, unless the stone be very large, when it should be removed by the suprapubic operation, lithotrity is always easily available and it avoids the troublesome after-consequences of over-dilatation of the urethra or the danger of a vesico-vaginal fistula.

Barwell, Richard: Pes Planus and Pes Cavus. Anatomical and Clinical Study. (*Edinburgh Medical Journal*. 1898. Vol. lxvi., No. 2; *International Medical Journal*. 1898. Vol. vii., No. 5.)

As etiologic factors in the causation of pes planus are mentioned those causes which tend to throw strain upon the muscles responsible for the maintenance of the plantar arch, viz.: the tibialis anticus and posticus, the peroneous longus, and the flexor longus hallucis, as well as the smaller "tie beam" muscles of the sole. These factors are especially potent in the bodily states in which the muscles are weakened, as during stages of rapid growth and after prolonged illness. Stress is laid on the function of the flexor longus hallucis as a supporter of the plantar arch, a function previously overlooked. Running beneath the sustentaculum tali it supports it, and through it, the astragalus. The author deprecates the use of "valgus pads," the name he applies to the plantar spring. He asserts that although they forcibly restore the arch while in position, they also cause a pressure-atrophy of the "tie beam" muscles of the sole and produce pain by pressure on the internal plantar nerve.

He recommends, instead, leather pads fastened to the inner margin of the sole and heel of the shoe. (This teaching is contrary to that of most American orthopedists, with whom the plantar spring is very popular. It certainly relieves pain in flat foot much oftener than it causes it, and it is a question how far the author's device, by which pressure is made on the ends of the already flattened arch, will go towards restoring it, although it may correct the valgus.) Exercise, and, for exaggerated cases, the hot-air oven, and over-correction with the subsequent use of plaster are recommended. As causes of cavus are mentioned undue length and paralysis of the calf muscles, resulting in dropping of the heel, and spasticity of the peroneus longus. There is later contraction of the plantar structures. Division of the plantar fascia, the plantar ligaments and the long flexor and adductor hallucis are necessary. Hot air baths may be useful in the subsequent treatment.

Gastric Ulcer in an Infant Two Months Old.—Dr. Cade reports the following rare case (*Rev. Mens. des Maladies de l' Enfance*, II., 1898.) The child, two months old, was suffering for four weeks with vomiting and hematemesis; finally general peritonitis set in, and the child died; autopsy showed that the peritonitis was due to a perforated round ulcer of the stomach. Basing himself upon this and the other published cases, the author says that ulcus rotundum in infancy has the same anatomical characters as in the adult, and thus in both the hemorrhages and the perforation-peritonitis are the most dangerous complications.—*Medico-Surgical Bulletin*.

The Treatment of Diarrhœa.—Syms (*Dublin Journal of Medical Science*), thus summarizes the treatment of diarrhœa: In treating diarrhœa in children very distinct objects must be kept in view, and our remedies given on a true scientific basis. Recollect:—Poisoning and fermentation from micro-organisms; indigestible and undigested food with deficient evacuation, and a profuse and dangerous drain of water from the system. The slightest remedy relieves the mild cases, while others are hopelessly incurable in the absence of a suitable antitoxin.

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CASES OF TUBERCULAR MENINGITIS WITH PECULIAR RESPIRATORY PHENOMENA.*

BY HENRY DWIGHT CHAPIN, M.D.,

New York.

The irregularity and varied character of the symptoms of tubercular meningitis are well known to all observers of this disease. They may be partially explained by the fact that it is rare for the meninges alone to be attacked by the tubercular process, which is usually of a diffused miliary character. In very young subjects the bronchial glands and lungs are nearly always involved. The symptoms produced by this involvement of various vital organs are surprisingly few when the meningitis assumes a pronounced form. The respiration is nearly always affected, assuming an irregular, sighing character, and when the disease is well developed the Cheyne-Stokes variety is apt to be noted. The object of the present paper is to call attention to a peculiar and intense form of dyspnœa that may rarely be seen in connection with severe cases of tubercular meningitis. As far as the writer can find, very little attention has been paid to this peculiar and distressing symptom.

CASE I.—Alice K., ten months old, admitted to the Babies' Wards, December 26, 1897; died January 3, 1898. *Family History:* Both parents living and in good health. Baby was born healthy and has had no illness except a slight diarrhœa during the summer. *Present Illness:* Three weeks ago the child began vomiting and became very restless. Vomiting occurred once or twice a day after feeding. A slight cough developed. Bowels were constipated. Four days ago the baby was suddenly seized with general convulsions. Since then has had repeated

* Read by title before the American Pediatric Society, Cincinnati, June, 1898.

attacks, as many as fifteen a day. *State on Admission:* Well developed baby; body rigid; eyes staring and pupils dilated. Examination of the lungs negative.

PROGRESS OF THE CASE.

December 26th.—Bowels irrigated; return flow brought away a quantity of green and yellow fæcal matter with mucus. Temperature, 100°; respiration, 48; pulse, 125. Several slight convulsions on the right side during the night; one general convulsion lasting three-quarters of an hour at 10 P.M.

December 27th.—Constant twitching of right leg all day. One general convulsion in the afternoon lasting about twenty minutes. Lumbar puncture was performed and half a drachm of clear fluid removed. No tubercle bacilli found after careful examination by bacteriologist. Child fed by gavage. Slept well during the night but constant twitching of the right leg is present.

December 28th.—Had two general convulsions during the day. Pupils of both eyes very much contracted for about an hour in the morning. Arms very rigid for the greater part of the day, with occasional twitching of right leg. Examination of the eyes showed beginning papillitis of the right eye; left eye normal; pupils sluggish. Remained rigid all night and had one general convulsion.

December 29th.—Slept all the morning. At times rigid, respiration becoming very irregular. A general convulsion at noon. A number of slight convulsions during the night, two lasting about half an hour. Respiration and pulse both irregular.

December 30th.—Constant twitching of the right leg. Rolling of the eyes and the right eye turned in all day. Pulse very rapid and irregular. During the night the left arm and leg were in a spastic condition. Right eye turned inward. Profuse perspiration about the head and did not sleep as well as usual; kept sighing and moaning.

December 31st.—Remained rigid the greater part of the morning. Respiration irregular and shallow. Pulse stronger but very rapid. During the night remained rigid, with very few convulsions.

January 1, 1898.—Slept greater part of the morning; twitching of eyelids when awake. During the evening the

respiration became irregular and slow. At midnight pulse was stronger and respiration more regular.

January 2d.—At 2 A.M. respiration became very labored with great dyspnœa on inspiration. Air entered the lung very imperfectly. During inspiration the chest-wall sank in to a marked degree and the child seemed about to die from dyspnœa. This continued in varying degree until death in the afternoon. Coarse, moist râles were heard all over the chest. For twenty-four hours before death the child showed all the symptoms of severe membranous croup. During the illness the temperature varied from 100° to 103° F.; but just before death it arose to 106.6° F. The respiration varied from 20 to 54, and the pulse from 120 to 160. Examination of the urine showed hyaline casts but no albumen nor sugar.

AUTOPSY—BRAIN.—Skull-cap thin; excess of fluid about the brain. There is marked fibro-purulent exudation on the under side of the brain, especially at the pons, medulla, and optic commisure. There are small scattered miliary tubercles throughout this area; also on the inferior surface of the frontal lobe about the olfactory bulb, and on the inferior and superior surface of the cerebellum. Both surfaces of the latter are studded with tubercles, most marked on the upper surface. There are also tubercles along the fissure of Sylvius. The convex surface of the brain presents a smooth, glistening appearance with a few small tubercles on both sides, and with markedly distended blood-vessels. The lateral ventricles contain an excess of rather turbid fluid. The walls are very soft and easily broken down. A few tubercles can be seen on the choroid plexus but none are noted in the lining of the ventricles.

CHEST.—The bronchial glands enlarged and caseous. Lower portion of the lobe of the left lung shows on section a cheesy tubercular area; rest of the lung fairly well aerated. Bronchi are congested and coated with mucus. There are adhesions between the upper and middle lobe of the right lung and congestion and œdema of the lung, but no tubercular areas.

Other organs normal.

Diagnosis, acute tubercular meningitis, chronic tuberculosis of bronchial glands and of the left lung.

CASE II.—Hulda E., four years of age, admitted to the Babies' Wards, November 27, 1897; died December 8, 1897. *Family History:* Both parents living and healthy; five other

children who are healthy. The child was breast-fed; had measles three years ago and whooping-cough last spring. *Present Illness:* Two weeks ago while playing under a table, she arose suddenly and struck her head severely against the under side of the table. No abrasion of the scalp was noted. Four days later, she began to complain of severe headache. She vomited all her food and some green matter. The vomiting stopped after four days. When left alone the child closes her eyes and wishes to sleep, at times awakening to cry out with pain. Has been feverish at times. *State on Admission:* General appearance good. Heart and lungs negative. Weight, 37 pounds; respiration, 28; pulse, 128; temperature, 98° F.

November 27th.—No stool during the day; dose of calomel administered. Was noisy at night and did not sleep well. Took considerable nourishment.

November 29th.—Complained of pain in the head.

December 1st.—No stool in forty-eight hours; enema given. Examination of the eyes showed pupil of the left eye more widely dilated than that of the right; fundi normal; both eyes turned toward the left most of the time.

December 2d.—Eyes slightly blood-shot; pupil of left eye very much dilated. No movement of the right arm noticed during the day.

December 3d.—Could with difficulty be roused to take nourishment. Soon went into a comatose condition and remained so all day. When roused for nourishment seemed unable to open the left eye. No movement of the right leg noticed. She remained in a comatose state all night and refused nourishment.

December 4th.—Some congestion of the fundus of each eye, but no actual inflammation. Pupils contracted, but the left still a little more than the right. The conjugate deviation noticed three days ago is now absent. Remained in comatose state all day. Breathing was noisy during the day but more quiet at night.

December 6th.—Appeared somewhat better. Pulse stronger and respiration more even. Right pupil very much larger than the left. Took nourishment better than usual.

December 7th.—Lumbar puncture performed and clear fluid withdrawn. Bacteriological examination showed no tubercle bacilli or other germs. During the morning she was seized with great difficulty in inspiration, all the accessory

muscles of respiration being brought into play. There was a sucking in of the soft parts on inspiration and dropping of the larynx. Color fairly good. Breathing seems to be entirely thoracic. The air seemed to enter better when she was in an upright position. The dyspnœa increased to such an extent that a tube was inserted which seemed to somewhat improve the breathing. Patient was fed by gavage. In two hours the tube was withdrawn. The child presented all the evidences of diphtheritic croup in an extreme stage. A throat culture was taken from the mouth and found to be free from Klebs-Loeffler bacilli. The dyspnœa seemed to come in an irregular manner, at times being much worse than at others.

December 8th.—Air enters the lungs very imperfectly, but appears to enter the left side much better than the right, with the disparity more marked at the apices. Death finally ensued from exhaustion rather than from dyspnœa.

The temperature varied from normal to 104° F.; on the day before her death it arose to 106.8° F. Respiration varied from 28 to 70, and the pulse from 95 to 170.

AUTOPSY.—No sign of injury apparent.

SPINAL CORD.—On opening the vertebral canal 25 c.c. of cloudy fluid escaped. There is a tubercular exudate on the surface of the dura mater and adhesions between the latter and periosteum of the vertebræ, especially marked at the upper portion and down as far as the fifth dorsal vertebra. The pia mater is slightly congested. On section of the cord no gross lesion is apparent. Substance is pale and very soft.

BRAIN.—Surface of the dura congested but smooth and glistening. Pia mater is intensely congested. There is a serous exudate in its meshes, in places compressing the brain, and flattening the convolutions. This is most marked over the anterior portion of the third frontal convolution and about the fissure of Rolando on the left side. The pia is thickened, especially at the base of the brain and over the superior surface of the cerebellum and in the fissure of Sylvius. In these regions were found small pin-head, translucent nodules, apparently miliary tubercles. The lateral ventricles each contained about 5 c.c. of clear, straw-colored fluid. The ependyma is smooth and glistening. The choroid plexuses are markedly injected and studded with small miliary tubercles. On section

the brain substance shows congestion. The basal ganglia, pons and medulla, show no gross lesions.

CHEST.—The left pleural cavity free from adhesions and smooth and glistening. On the right side in the axillary line between the first and second ribs are a number of firm, old plastic adhesions, otherwise the pleural cavity is free. The lungs are firmer than normal and everywhere through them can be felt small nodules. Between the pleura of both lungs are marked tubercles. On section miliary tubercles are found scattered throughout both lungs. The lower lobes are congested and œdematous. The bronchi are congested and contain considerable thick mucus of a light yellowish color. There are old adhesions between the lobes of the right lung, and in the lower portion of the upper lobe is a rather firm area about 3 c.c. in diameter, which on section shows a cavity nearly 1 c.c. in diameter. The inner surface of the cavity is covered with thin, purulent material. The wall is quite firm and surrounded by an area of consolidation. The bronchial glands are greatly enlarged and contain cheesy material in their centres.

ABDOMEN.—Intestines moderately distended. Omentum adherent to abdominal wall and to coils of the small intestine. The omentum is thickened and studded with miliary tubercles. The peritoneal surface of the intestines is covered in places with fibrinous exudate. There is no fluid in the pelvis. The dome of the diaphragm is unusually high, on the right side extending to the second rib and on the left side to a corresponding point to the third rib. Its under surface is studded with miliary tubercles. Mesenteric glands enlarged. Spleen is found studded with miliary tubercles. Liver is of usual size and its surface is dotted with tubercles. On section it is found dark in color but no tubercles are apparent. Kidneys are slightly enlarged; capsule smooth and non-adherent; cortical portion swollen, pale in color with indistinct markings; no tubercles found.

Other organs healthy.

CASE III.—As no autopsy was allowed in this case, a very brief account of it will be given.

Lillian W., eighteen months old, was sent to the Babies' Wards with the diagnosis of cerebro-spinal meningitis. She had had convulsions and presented all the symptoms of a general meningitis. She was taken with a croupy cough. Fearing an attack of diphtheria, fifteen hundred antitoxin units were

given and a culture taken. The throat showed no evidence of diphtheria, however. The report on the culture was negative. The croupy symptoms and dyspnœa increased and there was great difficulty on inspiration with sucking in of the soft parts. The dyspnœa did not become so extreme as to warrant intubation. The child did not die with symptoms of stenosis of the larynx but apparently from the usual course of the disease.

The temperature was most irregular during the illness, varying from 98° to 106° F., on six or eight different occasions going above 105° F. Respiration was also irregular from the beginning. Examination of the eyes showed that the discs were much too pale, as if there was an incipient atrophy. The blood-vessels were not much changed but the finer ones were apparently gone. There were convulsions during the course of the illness.

In comparing this case with the others, it has seemed to the writer that the meningitis was probably of a tubercular character and the dyspnœa of the same nature. It is difficult to explain exactly why these cases presented the evidences of extreme stenosis or obstruction to the entrance of air. In the first two cases the autopsy showed absolutely no membrane nor any apparent physical cause for this dyspnœa. Whether it was due to pressure upon the laryngeal nerves by the enlarged bronchial glands, or to some cause acting upon the respiratory centres in the medulla, it is difficult to say.

I am indebted to Dr. Davis for examining the eyes, and to Dr. LeWald for pathological work in these cases.

In the *Scottish Medical and Surgical Journal* for November, 1897, Dr. James Carmichael reports a case of basilar meningitis, not tubercular, in an infant aged five months, who died on account of attacks of difficulty in breathing, coming on especially at night. In reporting the case he states as follows:

"Chest is well developed. There is evident inspiratory difficulty. Expansion is free in its upper part and there is inspiratory recession in the epigastrium and in-drawing of the diaphragmatic insertion and lateral bases, producing a kind of hour-glass shape of the chest during respiration. Auscultation shows an old and harsh respiratory murmur without accompaniment except that of the loud snoring sound which is heard all over the chest."

He further states: "The attacks of dyspnœa occurred at very irregular intervals. At times, especially when the baby is taking his bottle, the respiration is quite free and easy. When the attack comes on it is noticed that he makes a series of inspiratory efforts of increased force during which no air enters the chest and there is great lateral retraction of the thoracic walls and epigastrium. During these efforts to breathe he wriggles about and at last draws in a long gasp of air with a loud snoring sound and respiration is soon re-established, after which he generally has a fit of crying. During the attack the mouth is partially open and the tongue quite retracted, apparently shutting down the epiglottis. Forcible pulling forward of the tongue or depression of its base relieves his breathing to some extent although not completely. In one of these attacks the respiration completely ceased and the child became pulseless and appeared to be dead. Artificial respiration aided by a tube passed into the larynx restored the breathing." The patient gradually grew weaker and died. Autopsy showed a basilar meningitis. The larynx was found normal except a little catarrh behind the epiglottis.

51 WEST FIFTY-FIRST STREET.

The Surgical Treatment of Congenital Spastic Paralysis.—Lorenz (*Wien. klin Woch.*) advises tenotomy of the spastic muscles, with attempt through separation to lengthen the divided tendons. In spastic equinus the foot should be kept from four to six weeks overcorrected. After this the pronators, the weakened tendo-Achillis, and the whole of the foot can be used. Where the knee is spastically contracted after tenotomy of the tendons of the semi-membranosus and gracilis, a lengthening of the tendons is to be expected, and a stretching of the knee even into the position of a slight genu-recurvation is desirable for a while. Instead of tenotomy, or myotomy of the adductors, Lorenz advises the use of force, under an anæsthetic. He prefers stretching to an open myotomy. He combines in certain cases neurectomy with myotomy. All retaining apparatus is laid aside at the end of from four to six weeks. The increasing use of the limb, combined with massage, electricity and active gymnastics, will in time enable the patient to get about without apparatus.—*Boston Medical and Surgical Journal.*

HEMIATROPHIA FACIALIS PROGRESSIVA.

BY FRANCIS HUBER, M.D.,

New York.

Facial hemiatrophy is a rare affection. According to Möbins, there are only about one hundred cases on record. It is generally unilateral; a few instances have been reported in which the trouble occurred on both sides.

Some authors claim that the lesion exists in the cervical sympathetic, others claim a primary atrophy of the subcutaneous connective tissue independently of nervous influences. Again it is regarded as a disease of the trigeminal nerve.

Osler says of the autopsies, Mendel's alone is satisfactory. There was the terminal stage of an interstitial neuritis in all the branches of the trigeminus, from its origin to the periphery, most marked in the superior maxillary branch.

The occurrence of a neuritis of other nerves, as well as the association of facial hemiatrophy with scleroderma, would appear to strengthen this view. In some cases the morbid process may extend beyond the fifth nerve. The course is usually progressive, though in time a complete stand-still occurs.

Some of the cases are traumatic in origin, others have followed infectious diseases and a number appear to be congenital.

The one reported below, aside from the rarity of the condition, is of value because of the straightforward history of traumatism, the result of forceps delivery.

Traumatisms, produced by operative instrumental interference, during the act of parturition, vary in degree from trifling abrasions to extensive lesions causing death. Birth palsies, unfortunately, are of frequent occurrence. They present themselves in practice in the form of a diplegia, hemiplegia or more localized paralysis of certain muscles.

Facial paralysis in the new born, the result of forceps application, is quite common, and the prognosis in the large proportion of cases is good, the muscles involved regaining their normal state in the course of a few weeks or months. In exceptional cases, however, the palsy persists. Facial deformity attended by pronounced atrophy or, correctly speaking, retarded development of the bony structures and other tissues of the head and face on one side, is extremely rare. I can recall but two

instances in the very large mass of clinical material, which has come under my observation during the eighteen years that I have been connected with the children's clinic of the College of Physicians and Surgeons.

To the courtesy of Prof. A. Jacobi, I am indebted for the opportunity and privilege of being permitted to present the following interesting case:

The photograph shows plainly the deformity and the difference in the appearance of the two halves of the face.

The history is as follows: Labor difficult, forceps being applied. The marks of forceps present for a long time. The mother states that when the child was four months old. the drawing of mouth to one side was very distinct. The lower jaw on right side flattened and has remained so, not keeping pace with the normal development of the other side.

At the present time, we notice that the right side of the face and particularly the lower half is smaller, less developed and flattened. The inferior maxilla does not describe a normal curve, but presents almost a straight line from the symphysis to the rameus on the affected side, the development being about one-third that of the normal portion.

The mouth cannot be opened to full extent, the greatest separation of teeth between upper and lower jaw is less than three-fourths inches. A distinct diminution in the size and bulk of all the tissues—bony, muscular and subcutaneous—is noted on the involved side. The eye is somewhat retracted and the lateral half of nose is decidedly smaller: this is particularly well marked in the difference in size of the anterior nares on the right side. On the affected side, the teeth are smaller and in a decayed state. Sensation does not appear to be disturbed. Ear, too. smaller than on the other side.

The muscles react to faradism, somewhat stronger on the left side, however. No R. D. demonstrated. The child unfortunately was very unruly and it was extremely difficult to make out any perfectly satisfactory tests.

The tongue is also involved, and we find the lingual hemiatrophy present. A striking feature in this as in other reported cases is the sharply defined limitation of the process, in the unilateral cases, to the median line. The face looks not "as if made up of two halves from different persons" (Osler), but rather as though formed by two halves taken at different ages in

the same individual; the side involved appearing the younger by several years in the case presented.

As to the etiology in this case, the history is clear that the lesion is due to traumatism with a resulting degenerative neuritis.



CHARLOTTE J., FIVE YEARS OLD, SUFFERING FROM HEMIATROPHIA FACIALIS PROGRESSIVA.

Though the patient does not present any other peripheral lesion, her mental development is not up to her years. She gives one the impression as though the trauma has caused a moderate meningeal hemorrhage at some time, with a secondary meningo-

encephalitis of moderate severity at the anterior portion of her brain, not involving any motor centres.

Osler writes: "The facial asymmetry associated with congenital wryneck must not be confounded with progressive facial hemiatrophy.

"Other conditions to be distinguished are: facial atrophy in anterior polio-myelitis, and more rarely in the hemiplegia of infants and adults; the atrophy following nuclear lesions and sympathetic nerve paralysis; acquired facial hemihypertrophy, as in the case recorded by D. W. Montgomery, which may by contrast give to the other side an atrophic appearance, and, lastly, scleroderma (a closely related affection), if confined to one side of the face."

Though the condition itself is incurable, much can be done to remedy the deformity in a measure.

It has been my good fortune to be able to follow up the case reported by the late Dr. E. C. Seguin nearly twenty years ago. An ingenious "plumper" of hard rubber made by a dentist and secured to teeth so that it could be easily taken out and cleaned, restored somewhat the fulness of the cheek and thus improved the patient's looks materially.

209 EAST SEVENTEENTH STREET.

Alcoholism in Children.—Dr. Combe, of Lausanne (*Annal de Méd. et Chirurg. Infant.*), summarizes as follows: 1. A wet-nurse who is accustomed to drinking wine may continue the same to moderation during the period of nursing. 2. A wet-nurse who has not been in the habit of indulging in alcoholics must not receive any during the entire course of the nursing period. 3. An alcoholic mother must not nurse her child. 4. Nervous children and those who are suffering from an organic nervous disease must refrain absolutely from alcoholic drinks. 5. Very young children must never receive any alcoholic drinks, except in cases of acute diseases in which alcohol is indicated. 6. Total abstinence should be insisted upon until at least the sixth year. From the sixth to the twelfth year children may occasionally drink a small quantity of very diluted wine. 7. Total abstinence is indicated in the case of older children who are wayward, lazy, and weak in memory. 8. Hereditary alcoholism favors idiocy, epilepsy, and insanity.—*Medical Record.*

A CASE OF ILEO-COLITIS IN A CHILD AGED SIX YEARS, SIMULATING INTUSSUSCEPTION.*

BY EDWIN E. GRAHAM, M.D.,

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The arriving at a positive diagnosis as early as possible in cases of children suffering from intussusception, and the difficulty in the diagnosis of the case here cited, seems to warrant its careful report and study.

I was called on October 5, 1898, to see Ethel D., a delicate, nervous child aged six years. During the previous two years in spite of careful regulation of diet, and a life in the open air, her appetite and digestion had always been poor, and constipation decided. At my first visit I found a dry tongue, frequent nausea and vomiting, no food or drink being retained. Temperature 102° F. The child had been ill two days with nausea, vomiting and diarrhœa. In the twelve hours preceding my visit there had been eighteen stools consisting of blood and mucus, each stool preceded and accompanied by pain and tenesmus. No abdominal tumor could be felt. Abdomen relaxed.

A diagnosis of ileo-colitis involving especially the lower portion of the large bowel was made. All nourishment was stopped and the child given freely of cool sterile water with whiskey, half a drachm every three hours. Six powders each containing one-twelfth of a grain of calomel and two grains of soda bicarbonate were ordered, one to be given every two hours, and the colon directed to be irrigated with one gallon of saline solution, a teaspoonful to the pint. A prescription was given containing Tr. opii deod., 3 i., Aquæ dist. q. s. ad ℥ iij. a teaspoonful directed to be given every two hours if the child had more than an average of six stools daily.

October 6th.—In the last twelve hours eighteen stools, consisting of blood and mucus, less vomiting, marked tenesmus, no fæcal material. A male catheter, moderately stiff, No. 12, failed to pass more than four inches into the rectum, and any

*Read before the Philadelphia Pediatric Society, December 13, 1898.

pressure upon catheter armed with stilletto gave much pain. Temperature 100° F. Calomel, gr., iij.,soda bicarbonate, gr. V. given in one powder to be followed in three hours by citrate of magnesia, 4 oz. The opiate which had been given every two hours was discontinued temporarily. The child was drowsy but easily awakened; no contraction of pupils; no marked prostration.

October 7th.—Stools, twenty in previous twenty-four hours, preceded and accompanied by supra pubic pain and tenesmus: no fæcal matter; gas passed per rectum; no abdominal distension or tumor. Ice water enemata, 3 oz. every three hours were ordered. Chicken broth or beef juice given every two hours; opium renewed and salol gr., iij., bismuth subnitrat, gr. V., given every three hours.

October 8th.—Stools sixteen: vomited twice; retching; pulse, 105 to 120; temperature 99° F. The index finger passed into the rectum disclosed a condition as follows: the tip of finger if kept in contact with the mucous membrane entered a cul-de-sac about one-half inch deep. This cul-de-sac was easily followed over entire circumference of bowel, the central portion of lumen bowel being occupied by a soft prolapsed mass. Attempts to pass finger into prolapsed portion gave great pain, and the same pain was felt if catheter guided by finger was attempted to be passed. No abdominal distension, no tumor, no evidence of collapse.

October 9th.—Stools eleven, still consisting of blood and mucus, frequent vomiting of green watery material with retching. Ice water enemata retained at times ten minutes: opium continued. Carbolic acid grain, one-half every three hours for vomiting. Child's condition good.

October 10th.—Stools eight; less vomiting; passed gas per rectum.

October 11th.—Stools seven; vomited once; no abdominal distension; no fæcal matter as yet in stools; child complains of hunger. Milk, broths and small portions of toast allowed. Still unable to pass catheter more than four inches into rectum. The cause of obstruction being now plainly due to prolapsed rectal mucous membrane, a favorable prognosis was given with confidence. No abdominal distension; child stronger; opium continued.

October 12th.—Stools five; passed gas a number of times

per rectum; ice water enemata usually retained fifteen minutes; opium continued.

October 13th.—Stools four; mucus and blood; very offensive. Salol, gr. iij., every three hours. Rectum to be irrigated daily with saline solution, two quarts.

October 16th.—Unable to pass catheter; three stools in previous twenty-four hours; mucus, blood, and dark tarry material, possibly fæcal matter.

October 18th.—Stool with saline irrigation consisting of mucus, blood, and distinct fæcal particles, decided fæcal odor. One quart of saline irrigation retained five minutes. Prolapsed mucus membrane can still be felt; finger passed more easily into prolapsed portion.

October 20th.—Slept all night; formed fæcal movement followed irrigation.

October 22nd.—Large formed fæcal movement. Semi-solid food allowed in small quantities and abundance of milk and animal broths.

During the next ten days the child steadily improved, was allowed to sit up on October 24th, was placed in chair on October 26th, and was allowed to drive out in closed coupé on November 2d.

In the study of the case above reported one must consider carefully the anatomical conditions present. Treves writes: "The rectum in the adult is situated entirely within the true pelvis and presents three marked curves, one in the lateral and two in the antero-posterior direction. In the infant, however, a good deal of the rectum is in the abdominal rather than the pelvic cavity, the gut is nearly straight and occupies a more or less vertical position. For these reasons prolapsus ani is much more common in children than in adults."

Sir B. Brodie writes: "Prolapse of the rectum occurs most frequently in children and especially those with large tumid bellies and costive bowels, when the whole mass of the intestines becomes too large for the cavity which contains it. In children the prostate gland, urethra, vesiculæ seminales and all those parts are not so much developed as in the adult. The attachment of the rectum to the surrounding parts does not extend so high in children as in persons of mature years, while the reflection of the peritoneum takes place lower down and the rectum is more liable to be pushed out."

The looseness of the attachment of the submucous connective tissue to the walls of the rectum and the straightness of the coccyx in children are also factors favoring prolapse.

Houston's valves which played, I believe, an important part in the case here reported, should be considered. "One of these is on the left and hinder side of the gut about three cm. above the anus, and a second is on the right and rather in front about 6 cm. from the anus. In the empty state of the bowel these valves, three or four in number, overlap each other, as Mr. Houston remarks, so effectually as to require considerable manœuvring to conduct a bougie or the finger along the canal of the intestine. The second is the more prominent and often projects as a broad shelf. The dilatation below the second fold is the ampulla analis." (Text-book of Human Anatomy, Macallister.)

The conditions present in the above case appear to be as follows: A child with weak muscles, poor digestion and habitual constipation; a relaxed condition of the mucous membrane above Houston's valves. To these predisposing causes to prolapse of mucous membrane was added the active ones of proctitis with swelling, infiltration, and inflammation of mucus membrane and tenesmus. The prolapsed mucus membrane entirely occluded the lumen of the bowel at the position of Houston's valves as far as the passage of fæcal matter was concerned, but allowed the passage of gas.

The main facts leading to the non-diagnosis of intussusception in the present case were as follows:

Absence of abdominal tumor.

Absence of distension of abdomen.

Absence of severe recurring paroxysmal pain.

Passing of gas by bowel.

No evidence of marked prostration.

The fact that in about one-half the cases of intussusception the tumor is either felt in the rectum or protrudes from the anus, makes the recognition of the here reported condition important.

Is it not possible that some of the cases reported of intussusception are really not intussusception, but cases of prolapse of rectal mucous membrane?

Had the case been one of intussusception where the incarceration was not absolute, and a spontaneous cure occurred, the

soft now inflamed prolapsed mucous membrane should not have been still easily felt by my finger on November 2d. On November 10th, no evidence of prolapse mucous membrane could be felt after a most careful digital examination.

I have been unable to find in any text-book or journal mention of obstruction of the bowel being caused by the conditions present in the above case.

1713 SPRUCE STREET.

Infantile Paralysis.—Drobnik (*Zeitschrift für Chirurgie*) describes sixteen operations for transplantation of the muscles in infantile paralysis, and states that it is very difficult to determine by electrical examination what muscle is completely destroyed and what muscle can be later developed. He has found atrophied muscles in certain cases which did not react to electrical irritation, in some instances have developed activity after the partial restoration of the use of the limb. The surgeon is careful to plant the tendon in a state of tension so as to admit a relaxed condition of the transplanted muscle. Massage, active and passive motion should be begun with care. Adhesive plaster is applied for a while to prevent stretching of the newly formed tendon.—*Boston Medical and Surgical Journal.*

Shall New-Born Babies be Washed?—Schrader (*Berliner klinische Wochenschrift; Klinisch-therapeutische Wochenschift.*) has investigated the effects of bathing new-born children, in order to settle the point as to whether the healing of the stump of the cord is influenced by that process. The treatment of the stump was the same in all the one hundred and fifty cases. It was dressed daily with sterile gauze and dusted with a mixture of one part of salicylic acid and four parts of starch. The healing of the stump and its separation took place in a more satisfactory way in those children who had been bathed. Dry dressings for the stump were found to be much better than oily ones, the fat preventing the proper drying of the cord. The weight of the bathed children increased more rapidly than that of the others, and no cases of eye infection from the water used in bathing the children were noticed.—*New York Medical Journal.*

BRONCHO-PNEUMONIA: ITS DIFFERENTIAL DIAGNOSIS AND TREATMENT IN CHILDREN.

BY M. S. MARCY,

Peoria, Ill.

In considering this subject it may be pardonable to refresh the memory with certain anatomical peculiarities of the child's lungs. Dr. Northrup says: In the fœtus the bronchial tubes are very large while the alveoli are scarcely developed at all. The connective tissue is simply a delicate mesh-work retaining the blood-vessels very loosely, are abundant in cell proliferation and occupy a much greater relative space than in the adult. The lining membrane of the bronchial tubes, with its net-work of capillaries, is bound very loosely to the muscular walls and lies in folds, the alveolar are thick and their structure comparatively loose and yielding, their inner surface readily sheds and proliferates epithelium as does the bronchial mucus membrane; moreover, the cells in both instances are relatively larger than those of an adult lung. The blood-vessels being loosely retained readily dilate and encroach upon space properly belonging to the alveoli and readily cause partial collapse. The thoracic walls are soft and yielding, while the muscles of the throat, bronchi, and chest, are relatively less developed and far weaker than in the adult.

These peculiarities—which of course diminish after birth and as the child grows older—should be borne in mind as showing the ease with which serious encroachment upon respiratory space may take place in certain inflammatory conditions. By the fifth year the loose connective tissue in a healthy child has become condensed, properly restoring the capillaries and binding the bronchial lining much more firmly to the walls, new alveoli have been produced, and the proper relative capacity of the air spaces to the bronchial tubes has been established.

These anatomical peculiarities referred to, together with the slight powers of resistance of the very young child, are among the causes of the prevalance of broncho-pneumonia in infants.

The early diagnosis of broncho-pneumonia is by no means easy and requires considerable care and study at the bed-side before the physician should give a positive opinion.

You will pardon me then for asking your careful attention while we endeavor to draw the lines as closely as possible

around this fatal disease, and differentiate between this and other diseases which simulate it closely and yet are very different as to course, treatment, and results.

We desire first to direct attention to the term capillary bronchitis. Those of us who have been in active practice for twenty years or more will remember how frequently this term was used by college professors. We were taught that it was a disease affecting the small but not the smallest bronchial tubes. A bronchitis that had reached the highest possible development without becoming pneumonia. Repeated autopsies and microscopical investigation have failed to discover a disease affecting the small but not the smallest bronchial tubes. At the same time many cases are recorded which are said to have died with capillary bronchitis which upon investigation have been found to contain collapsed vesicles and other evidences of broncho-pneumonia. There is perhaps no term relative to the diseases of lung tissue so confusing and so apt to mislead the young practitioner—as well as the old—as the term capillary bronchitis. It is gratifying to know that it is rapidly becoming obsolete and has been dropped by our latest and best medical authorities.

Acute bronchitis is an inflammation affecting the whole or any portion of the lining membrane of the bronchial tubes except the bronchioles. In a great majority of cases this disease—by careful study—can and should be diagnosed quite early. The almost painless cough, slight constitutional disturbance, absence of dyspnœa and dulness, the mucus râles that are heard throughout, or, in some portion of the tubes, heavily coated tongue, quiet countenance—all indicate a mild attack of bronchitis. While in more severe cases the child may have an alarming cough, high temperature lasting for a short time, which may be deceptive and lead the physician to think that he has a case of broncho-pneumonia, but the sudden falling of temperature, the abundant sound of râles and flow of mucus, and the general improvement of the patient will soon convince him that it is acute bronchitis only.

Croupous or lobar-pneumonia is nearly always a primary disease, not usually following other diseases, occurring suddenly while the patient is in good health. Its chief characteristics are: fever, hot skin, restlessness, rapid pulse, temperature 103° to 105° almost from onset of disease, drowsiness and stupor, delirium, hacking cough, pain in side, fremitus of the cry, dul-

ness on percussion, râles in early stage disappearing after consolidation; is apt to attack apex first, runs a very rapid course lasting from five to ten days, when the temperature falls rapidly, and the child is likely to recover. The disease is rarely fatal. If we bear in mind the above symptoms and contrast them with the graver symptoms met with in broncho-pneumonia surely the differential diagnosis will not be so difficult.

Broncho-pneumonia may be defined as an acute inflammation not only of the lining membrane of the bronchial tubes proper, but an inflammation involving the connective tissues, bronchioles, and air cells. This disease is very common among children under five years of age and the mortality great. In fact it is second to no other disease in infancy except cholera infantum. In June, July, August, and September the mortality is the lowest; all the other months claim its victims by the score. The anatomical peculiarities mentioned above, sudden changes of temperature, poor sanitary environments, measles and whooping-cough, are perhaps the principal causes of the disease. Whenever an epidemic of measles or whooping-cough prevails we may expect many cases of broncho-pneumonia, with a high rate of mortality. When the disease does follow measles—which perhaps is the greatest irritating cause—it begins with the symptoms of acute bronchitis. The inflammation extends along the bronchi very rapidly and soon involves the bronchioles, connective tissues, and air cells. On the other hand when the disease follows whooping-cough its advent is slow and as the inflammation extends the paroxysms of coughing decrease. Under this condition acute bronchitis may exist for ten or fifteen days before any pulmonary symptoms develop. When the inflammation extends to the lung tissue we notice an increase in temperature, dyspnœa, and a change in the character of the cough; instead of an abundance of mucus and râles with a loud cough—as in acute bronchitis—the cough becomes short, hacking, and painful, the respirations become rapid, and the anxious facial expression with the working of the alæ nasi indicate the difficulty of obtaining sufficient oxygen. The temperature rises to 102° to 105° in the evening with a fall of one or two degrees in the morning. When any of the sputa can be obtained it is found to be muco-pus, viscid and frothy and sometimes streaked with blood. As the lung becomes more and more involved, often the dyspnœa increases, temperature falls, the countenance

is livid, the skin is cool, and every evidence of carbonic-acid poisoning appears. If by any means the disease can be prevented from involving only a small area of lung tissue and thereby preventing collapse of the tissue, the patient has a far greater chance of recovery. But when large areas of the lung tissues are attacked and the tissues collapse, dyspnœa increases so rapidly that the patient succumbs from fatigue and the need of oxygen.

It might be profitable for a moment to look into this condition called collapse of lung tissue. Collapse occurs in proportion to the severity and prolongation of the attack of broncho-pneumonia. In acute inflammation of the lining membrane of the bronchi, the cells of columnar epithelium, with their ciliated fringes which form the superficial inside coating of the tubes, desquamate and are replaced by cells of embryonal type which are rapidly proliferated and shed. The debris thus formed mixed with the secretion of the mucus glands should be expelled and it would be were it not for the poorly developed muscles (thoracic, bronchial, and laryngeal) and the weakened condition of the little patient. But instead of this mixture of mucus, pus, and cells being coughed up—as it is by the adult—the two main branches of the bronchial tree naturally conduct the secretion which the child cannot force through the glottis—to the lower and posterior parts of the lungs, where perhaps the inflammation had not before invaded, hence, the reason why we find more consolidation of the posterior part is because the child lies on its back, and the mucus naturally gravitates to that part. Now as the smaller bronchi become filled with this mucus either as a result of gravitation or inflammation the air cannot enter the cells, and collapse is the result. In addition to this the inflammation extends to the loose connective tissues and the embryonal cells appear and tightly pack the epithelial lining and the elastic bronchial walls,—called peri-alveolar inflammation—which rapidly extends to the adjacent air cells. Thus we have the bronchioles filled with mucus and pus, not allowing the air to enter the vesicles, and a pressure outside and surrounding the bronchioles and vesicles, as a result of inflammation and hence collapse of vesicles or lung tissues.

To recapitulate briefly we have two distinct ways in which the inflammation may spread and collapse of lung tissue occur, either by natural extension of the inflammation, or by the migra-

tion of bronchial secretion which acts as an irritant and dams up the bronchioles.

The prognosis depends largely on the area involved, whether one or both lungs are affected, the amount of attention the patient receives, quantity of nourishment taken, and somewhat on the treatment. It matters not how small the area involved is, at the beginning, the physician is not warranted in making promises of recovery, but on the contrary should insist on constant nursing and warning the parents of the danger of the disease spreading and involving all lung tissues. The mortality varies from 30 to 50 per cent.

In regard to treatment physicians differ widely. In the first place if the sanitary surroundings are bad, family in poor circumstances, patient in a small poorly ventilated room, receiving improper nourishment, and poor nursing, the physician is hampered and can expect but one result. If, on the other hand his patient is found among the better classes, financially, he has at least a fighting chance to save the patient. Among this class, one of the first things that should be done after the physician has made a careful diagnosis and satisfied himself that the case is one of a serious nature and will very likely be broncho-pneumonia if it is not already, is to insist on having a trained nurse. No mother, I care not how great her anxiety for her child's recovery, can attend to the child, neither will she obey orders as will the trained nurse. She is more essential to the physician's success than are his medicines; could I have but one I would take the trained nurse.

In speaking of a typical case I will refer to one that occurred in my practice beginning last July 6th and ending July 22d. The patient, a delicate girl of two years, belonged to a family in good circumstances with good surroundings; child had measles a short time previous, was taken with high fever, rapid pulse, tongue coated, hacking cough, loss of appetite, languid, inclined to be stupid. The child was put to bed and a trained nurse had full control of her from the start. Calomel was given in small doses until the bowels moved freely; this was continued throughout the attack keeping the bowels active. During the first few days aconite was given every two hours and then discontinued entirely. Ammonia muriate, two grains in whiskey and glycerine was given every two hours. Quinine disguised in quinimal was given in one grain doses for a part of the time.

Wyeth's pepto-manganate of iron was given when the acute symptoms began to subside. After the aconite was discontinued the nurse was instructed to apply the cold water bag to the affected side, cold applications to the head, and to put the child in a cold bath whenever the temperature raised above 103°; this she had occasion to do several times during the attack. I should have stated that the disease involved a part of the right lung very early in the attack. After we began to apply the ice bag to the side affected, the inflammation did not extend but confined itself to the area already involved. The heroic nurse sat by the little patient day and night taking the temperature every hour, giving the nourishment and medicine promptly, applying the ice bag to the side and head when the temperature would rise, removing the cold and giving stimulants when it would fall too low, applying the hot water bag to the feet, until we had the satisfaction of seeing the little patient slowly coming back to life.

Formerly it was the custom of many physicians and perhaps may be with some at the present time, to apply large heavy hot poultices to the chest, and to give large doses of squills, senega, and other nauseating expectorants, for the purpose of hastening the suppurative stage and thereby hoping to assist the patient in overcoming the disease. Is it advantageous in this class of cases to endeavor to stimulate the glands to secrete more mucus, or is it better to try to prevent the glands from pouring out large quantities of mucus and thereby filling the bronchi with mucus, pus, and embryonic cells? No physician would think for a moment of depriving the patient with this disease of an abundance of pure air, yet that is just what he is doing who applies hot poultices and gives stimulating expectorants. The hot applications increase the flow of blood to the part and thus the inflammation extends. The expectorants stimulate the glands and a great quantity of mucus is poured out, filling the bronchi until the patient is smothered. Another custom that should be condemned is that of wringing flannels from hot water and applying them to the chest, lifting the bed clothing and changing the wet flannels every few moments allowing the air to strike the patient and getting the clothing wet. This treatment will surely increase the inflammation faster than any other means, and yet this was once in vogue. Many a patient has thus been

killed by kind intentions. If those who have been in the habit of applying hot poultices, and hot wet flannels and giving stimulating expectorants in this class of cases, will try the cold application carefully applied, their mortality will surely decrease.

Empyema of the Antrum in a Child.—Mr. D'Arcy Power recorded a case of the above, which was a condition rarely met with. The child was eight weeks old, and came under observation with an abscess discharging below the right eye. Delivery had been effected with forceps, much bruising having resulted. When a month old the right cheek swelled, suppuration ensued, and then extensive necrosis of the upper jaw. Death took place ten days afterwards. One case of a similar nature had been recorded by Dr. Owen Rees in the *London Medical Gazette;* in this instance birth took place with the face to the pubes, and to this Rees ascribed the injury which led to the suppuration.—*British Medical Journal.*

German Measles.—Dr. Pulawski (*Gazeta lekarska*, 19-20, 1898) as a result of the study of two epidemics makes the following statements: The disease sets in abruptly without any previous prodromal symptoms. The period of incubation is about two weeks. During the entire course of the disease the temperature is normal or only slightly elevated. The eruption is similar to that of measles, with this exception, that it is somewhat smaller and lighter than the latter. The eruption appears first on the face and neck, then on the chest and back, and finally on the extremities. The eruption is accompanied by itching, and desquamation is entirely lacking or appears only on the face. In concluding, the author states that, contrary to the teachings of Henoch, he considers rubeola a distinct and separate disease, and summarizes as follows: "1. The clinical picture of rubeola resembles that of measles, it is true; but still it has its own characteristics which are repeatedly seen. 2. Rubeola patients can cause the spread of this disease only, and not that of measles or scarlet fever. 3. Rubeola does not protect against the other acute exanthematic diseases, and *vice versa*. 4. Rubeola occurs not only in sporadic cases but also in epidemics." —*Medical Record.*

Clinical Memoranda.

ACUTE THYROIDITIS WITH SUPPURATION.

BY CHARLES S. SHAW, M.D.,
Pittsburgh, Pa.

On September 14, 1898, Willie M. was brought to my office by his mother who said he was suffering from severe trifacial neuralgia, appearing daily about five P.M., and lasting from eight to twelve hours. Examination showed a pale, anæmic boy twelve years old, blue eyes and light yellow hair, undersized and evidently lacking in vigor. His mother has occasional attacks of neuralgia; family history otherwise negative.

PERSONAL HISTORY.—Diphtheria when five years old; scarlet fever when nine; perfect recovery in each case. Present neuralgia of about one week duration. Four days later (September 18th), I was called to see him. Since the evening before he had developed a swelling in the neck just above the sternum, which proved to be the thyroid gland. It was enlarged to the size of a hen's egg, tense, painful, and red. He complained of pain on swallowing and on movement of the head. The muscles of the neck were rigid and the head slightly retracted; pulse, 130; temperature, 102½° F.; tongue furred; appetite wanting; sleep broken and restless; neuralgia persistent; examination of chest and abdomen revealed nothing abnormal.

Application of ice-bag to the neck and exhibition of morphia and aconite gave little benefit, the symptoms all continuing. On September 25th, fluctuation being detected, the gland was incised under chloroform by Dr. J. J. Buchanan. One ounce of foul ill-smelling pus was evacuated and the wound packed with iodoform gauze.

The operation was followed by immediate relief. The temperature and pulse fell to normal, the appetite returned, the neuralgia disappeared, and within a week, the dressing being removed twice, the wound was completely healed. At the present date, October 26th, the boy is perfectly well, the only remaining evidence of the attack being some induration and enlargement of the gland.

410 PENN AVENUE.

AN UNUSUAL CASE OF PERICORNEAL DISEASE IN AN INFANT.

BY ADOLPH O. PFINGST, M.D.,

Louisville, Ky.

I saw a case recently in an infant, which was to me of unusual interest, and in which I was unable to make a diagnosis. The infant when I saw it was ten days old. When six days old the attending physician and the mother had noticed that the eyes were both red, bloodshot, as they called it.

When I saw the baby on the tenth day there was marked injection of both eyes around the cornea, so sharply defined that it looked like a subconjunctival hemorrhage. Between the cornea and this reddened area on one side there was a small portion of the sclera (white) to be seen. Otherwise it looked like a pericorneal injection due to some inflammatory condition. The cornea was perfectly clear, and the pupils responded to light and were of normal diameter.

I saw the case a week afterwards when this condition had almost entirely disappeared. I could not examine the fundus of the eye on account of the tender age of the patient.

I do not know what to suggest about the cause of such a condition, but attributed it to some internal inflammatory condition in spite of the fact that the pupils responded to light and were otherwise normal. There was no discharge from between the lids, and the palpebral conjunctiva was normal. Examination of the fundus might have thrown some light on the subject, but it seemed to me out of the question on account of the age of the child.

School-Physicians for Germany.—A number of the German medical societies, the Berlin Brandenburger Aerztekammer (Medical Council), and finally the government commission appointed for the purpose of investigating the question, have all reported in favor of the appointment of school-physicians. The reports of American school-physicians and the good accomplished by them have been the subject of a good deal of comment in the secular as well as the medical press, which has culminated in these recommendations.—*Philadelphia Medical Journal.*

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

FEBRUARY, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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THE PNEUMONIAS OF CHILDREN.

Pneumonia is a disease of particular interest for pediatric practitioners, for it is one of the chief causes of death in young children. In infancy it differs widely both in its pathology and clinical manifestations from the disease as it appears in adults. Frequently insidious in onset, irregular in its development, uncertain in its course, and fatal in its termination, it presents some of the most difficult problems which the physician is called upon to solve.

During the first two years of life, it is usually of the type known as broncho-pneumonia, but lobar-pneumonia may occur even in the earliest months. After four years, broncho-pneumonia is rare, the prevailing type being lobar-pneumonia. The terms lobar- and lobular-pneumonia may be misleading if they are understood to denote simply the extent of lung involved. Broncho-pneumonia may be so extensive in its distribution as to simulate lobar-pneumonia upon physical examination. The essential difference is not the amount of lung involved but the type of inflammation.

In acute lobar-pneumonia, the inflammation is purely exudative, there being an emigration of white blood cells, a diapadesis of red blood cells, and an exudation of blood plasma, the walls of the bronchi being but slightly affected. The air spaces are filled with an exudation composed largely of fibrin, in which may be found pus cells, red blood cells, and epithelial cells.

The essential lesion of broncho-pneumonia is an inflammation not alone of the mucous membrane, but of the walls of the small bronchi and the alveoli immediately surrounding them. The cavities of the alveoli are filled with pus, epithelia, and red blood cells, fibrin being entirely absent or present in but small amount. The small bronchi contain pus and are infiltrated with cells. The characteristic and most important lesion of broncho-pneumonia is inflammation and infiltration of the walls of the small bronchi and of the adjacent alveoli.

Many of the clinical peculiarities exhibited by these two forms of pneumonia are explained by these facts. The one results in filling the air spaces with inflammatory products; it runs a comparatively short and definite course; it terminates, as a rule, in rapid and complete resolution, leaving no traces behind. The other is interstitial in character, resulting not only in exudation into the air spaces, but in cell proliferation or actual connective tissue increase. It shows, therefore, a marked tendency to run an indefinite and prolonged course. Resolution is slow and is frequently long delayed. Evidences of connective tissue increase are frequently found for weeks or months after the acute symptoms have passed.

These two forms of pneumonia are well described by Dr. Marcy on another page of the present number. He does not mention, however, a third or rather a mixed form of pneumonia in which diagnosis of the type is very difficult. In referring to this subject some years since, we spoke of this third form of pneumonia as follows: "Typical cases of both forms of pneumonia are frequently seen and are perfectly distinctive. There are, also, intermediate forms which present the characters of

both. These intermediate forms occur chiefly during the second and third years. They present, clinically, a type of disease which is not characteristic of either lobar- or broncho-pneumonia. It is often impossible to decide, even upon *post-mortem* examination, to which class the case belongs, and the doubt is not always dispelled by the microscope."

These words are confirmed by Dr. Holt in his recent work on Diseases of Children, in which he speaks as follows: "While in typical cases the two forms of inflammation are quite distinct, there are seen many intermediate forms which partake of the characters of both, and one may be in doubt, even after a microscopical examination, into which group to place a case. It not infrequently happens that both varieties of pneumonia are present in different parts of the same lung or in oposite lungs at the same time. Those mixed forms are especially frequent during the second and third years; but during the first year, and after the third, the types are usually well marked." It is certainly a fact that many cases of pneumonia are seen which it is impossible to relegate to either type.

We are obliged to take exceptions with the author of the paper regarding the importance of collapse of the lung in broncho-pneumonia. But few modern pathologists now regard it as a very frequent or important pathological element and disagree with the earlier teachings in this regard. Holt thus refers to the subject: "Much has been said in the past about pulmonary collapse from obstruction of the small bronchi, as an antecedent condition to this form of pulmonary inflammation. So far as my own observations go, there has been adduced but little evidence that this is the rule, or, indeed, that this often occurs. Even in autopsies made very early in the disease, but little collapse was found, most of the cases supporting the view of Delafield, that when the disease extends from the bronchi to the air cells, it involves those surrounding the tube quite as regularly as those to which the tube leads."

THE TREATMENT OF PNEUMONIA.

We published about three years since a series of papers upon the treatment of pneumonia adopted in various children's hospitals of this country. In the last number we published a long discussion upon the treatment of the same disease in hospital and private practice. Although opinions differ more widely upon therapeutics than upon any other subject in medicine, the essential methods advocated in these various papers were more nearly uniform than might have been expected. It is evident that the same general principles underlie the treatment adopted by most men of large experience. All agree in the fact that in infants pneumonia usually reaches a fatal termination by exhausting the vital power and that every means, therefore, should be utilized to conserve that power. The digestion is easily deranged, and the appetite impaired. Any drug, therefore, be it ever so efficacious in relieving cough or other symptom, if it disturbs the digestion or destroys the appetite, may result in more harm than good. As there is doubt regarding the power of any drug over the disease, it is not strange that drugs should be used but little by the men of largest experience. It is true that certain medicines are of great value in combating certain complications, but it is yet to be proved that any medicinal agent possesses a controlling influence over the disease *per se*.

There can be no doubt that cases are sometimes lost through over-zealousness. Through the desire to leave no means untried, medicines and doses are multiplied, local applications are vigorously employed, the temperature is taken with unnecessary frequency, and the little patient is kept in a continual state of disturbance and excitement and is literally worn out for the lack of necessary rest and sleep.

While there is no specific treatment for pneumonia, there can be no doubt that many lives are saved by proper management. Careful feeding and hygienic management, counter irri-

tation and inhalations, and judicious stimulation, will save more children from death by pneumonia than can be saved by the filling of weak and irritable stomachs with irritating or nauseating drugs.

In a recent discussion upon the treatment of pneumonia in children, Dr. L. Emmett Holt thus summarizes his views:

(1) No depleting measures are ever admissible; (2) hygienic treatment is indicated, such as fresh air, proper feeding and good nursing; (3) no unnecessary medication is permissible; (4) many annoying symptoms may be relieved by local measures; (5) the administration of stimulants should be determined solely by the condition of the pulse; (6) high temperature is much more safely and effectively controlled by cold than by drugs; (7) greater caution is necessary in the use of powerful drugs than is generally observed; and (8) rest is quite as important as in any other serious disease.

In view of statements recently made by the *Medical Record* regarding its publication in mutilated form of the last report of the American Pediatric Society, we would repeat that the report, minority report, and discussion were sent to that journal, being identical with copies sent to other journals and published by them in full. Furthermore, a letter was also sent to the editor informing him that it was the desire of the Society that the report, minority report, and discussion should be published in full, notwithstanding his statement that "the existence of a minority report was unknown to him." The report was mutilated by the *Medical Record*, and the mutilating was done by the editor of that journal or one of his assistants. We hope we have made our meaning plain.

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Diphtherie und Diphtheritischer Croup. By Von Dr. Adolf Baginsky. *A. O. Professor der Kinderheilkunde an der Universität Berlin, Director des Kaiser und Kaiserin Friedrich-Kinderkrankenhauses.* Wien, 1898: Alfred Hölder, K. U. K. Hof- und Universitäts-Buchhändler.

The author defines diphtheria as a contagious disease with local and systemic manifestations, the disease being due to the specific action of the bacillus of Klebs and Loeffler.

A bacillus possessing the power of producing local processes and of generating a poison which enters the circulation. In the history of the disease which is given in detail, Hypocrates is credited with the first description of the affection. Nearly all the older writers of note had observed epidemics from time to time, which correspond very closely to the disease as we know it at the present time. One of the best of the papers which appeared during the last century was from the pen of Dr. Samuel Bard of New York.

Climate appears to exert very little influence upon the prevalence of the diphtheria. The author finds that it occurs alike in the tropics and in the torrid zone. Regarding the season of the year when the disease is most prevalent, it was found that most of the cases occur during the winter months.

From the first to the seventh year comprises the period of life when the individual is most susceptible. Among twenty-seven hundred and eleven (2711) cases observed by the author but seventy-four (74) were under one year, and only two hundred and twenty-eight (228) had passed the tenth year.

The physical condition of the child appears to play but a small part as far as the susceptibility is concerned. The strong appear as open to infection as the weak and diseased. The author believes that the bacillus may be carried by a third person who remains well.

Physicians are looked upon as often being a means of spreading the contagion. The history of the Klebs-Loeffler bacillus is exhaustively treated of and brings clearly before the

mind the immense amount of time and labor spent in the discovery of this most important micro-organism.

Under pathology all the organs are taken up in order, and give a very clear picture of the varied pathological states which the bacillus is capable of producing. In order to better illustrate the pathology and bacteriology of his subject, the author gives several excellent cuts which add greatly to the value of the work. The cuts which illustrate the changes that take place in the central nervous system are particularly to be commended.

The prognosis is considered favorable with the proper use of antitoxin. With antitoxin the disease is compared to varioloid, without the variola.

Therapy is referred to under three headings:—prophylaxis, local treatment to prevent the spread of the lesion, and the use of antitoxin.

The story of the development of the antitoxin treatment is most interesting and furnishes the reader one of the most instructive chapters in the book.

Twelve pages are devoted to intubation of the larynx.

The work as a whole is the most complete and instructive that has been offered to the profession on the subject of diphtheria. The translation of the book into English would be appreciated by many American readers.

Manual of Orthopedic Surgery. A Treatise on Deformities and Diseases of the Joints and Bones. By Stewart LeRoy McCurdy, M. D. *Professor of Anatomy and Oral Surgery, Pittsburg Dental College; Orthopedic Surgeon to Presbyterian Hospital.* 1898: Nicholson Press. Pp. xv. —339.

This little book differs considerably from most works on orthopedic surgery. It is devoted largely to diagnosis and treatment and contains but few abstruse discussions. One of the most marked features is the grouping of cuts illustrating similar conditions, thus rendering comparison easy. As an abridged work on orthopedic surgery the book will accomplish a useful purpose.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, December 8, 1898.

J. Henry Fruitnight, M. D., Chairman.

PHOCOMELUS OF THE HUMERUS IN EPILEPSY AS A STIGMA OF DEGENERATION, WITH A REPORT OF TWO CASES.

Dr. L. Pierce Clark, of the Craig Colony for Epileptics, read this paper. He said that the term "phocomelus" signified a shortening of the extremities—a condition that had not been very extensively studied in connection with the subject of monstrosities. The humerus was less frequently the seat of this abnormality than the other long bones, and it should be borne in mind that in normal individuals there were slight variations. Thus, it was common to find the right humerus a little longer than the left. In this connection, it was interesting to note that the examination of several thousand soldiers had brought out the fact that in left-handed persons it was the humerus that was the longer. Dr. Clark then reported two cases of phocomelus of the humerus, both occurring in young epileptic girls. In the first case, in spite of defective development of the left upper extremity, the left humerus measured 12½ inches in length, while the length of the other humerus was only 9 inches. In the same individual, the right lower extremity, measured from the anterior superior iliac spine to the internal malleolus, was 31 inches, while the left lower limb was only 30¼ inches long. In the second case, the right humerus was 7½ inches long, and the left, 12 inches. Both hands were of equal length.

Dr. Francis Valk said that he had been interested in the statement that the first of these patients presented a squint on the left side, for it suggested the query as to whether the muscular weakness on the left side had anything to do with this. He was inclined to think that the majority of squint cases were the result of muscular weakness. At one time he had kept under observation several epileptic children whose eyes were

under the influence of atropin, and he had noted that during this treatment the epileptic seizures were milder than either before or after the discontinuance of the atropin.

Dr. Clark remarked that some observations had been made regarding the ocular conditions presented by the patients at the Craig Colony, and the same effect of atropin had been noted.

THE ADVANTAGES OF PROTARGOL AND ARGONIN IN THE TREATMENT OF PURULENT OPHTHALMIA IN INFANTS.

Dr. Edward S. Peck read a paper with this title. He said that the advantages claimed for these silver salts were: (1) Rapid destruction of the gonococcus; (2) earlier disappearance of the secretion and cessation of the inflammation; (3) more prompt restoration of the injured corneal tissues to the normal. The distinguishing feature of solutions of argonin and protargol was that they were not precipitated by albuminous fluids. Protargol is a yellowish powder, readily soluble in either cold or hot water. Both the powder and the solution do not readily decompose. As argonin contains 4.2 per cent. of silver, and silver nitrate 6.35 per cent. of silver, the latter occupies a middle position in this respect between argonin and protargol. Protargol being more powerful than argonin should not ordinarily be used in greater strength than .5 per cent. to 2 per cent. Argonin is a white powder, readily soluble in warm water, but giving a turbid solution, which is readily decomposed by heat. It then becomes very irritating. Even when used in stronger solutions than 2 per cent. it has but little tendency to cause inflammation, and is not an escharotic.

Dr. Peck said that in the cases forming the basis of the present paper, the gonococcus disappeared ordinarily in five weeks, but sometimes as soon as two weeks. The cases so treated had exhibited less corneal ulceration, with iris protrusion and imprisonment; the gonococcus had been more quickly eradicated; there had been an earlier cessation of the secretion and of the inflammatory process; and the patient had suffered much less than where nitrate of silver was used. The treatment should be controlled by microscopic examination of the secretion every second day. In ordinary cases the diplococci would be found, when examined with a power of 750 diameters, contained in fifteen or twenty round cell formations on one

side. Repeated examinations are often necessary to verify a suspicion of the presence of the gonococcus.

A solution of argonin is best prepared by first introducing ten parts of cold water into a flask, and then one part of argonin. After vigorously shaking, sufficient boiling water is added to make up the desired quantity of solution, which is then strained through gauze. The most effective strength is a 3 per cent. solution. To prepare a solution of protargol, the powder is first mixed with water, or with water and glycerine, until a smooth paste is obtained; then sufficient cold or tepid water is added to make a strength of from .25 per cent. to 2 per cent.

The affected eye must be handled by a skilful nurse, standing behind the patient, and the unaffected eye must not only be protected, but must be carefully inspected on alternate days. The inflamed eye is first to be treated by the continuous application, night and day, of ice-pads, no interval being allowed until there is positive evidence of diminution in the quantity of the secretion. This may take a few days, or two or three weeks. The eyeball and conjunctival sac should be irrigated very frequently with a saturated solution of boric acid. In addition to these measures, a .5 per cent. or 1 per cent. solution of protargol should be carried rather forcibly, by means of a large pipette, over the eyeball and conjunctiva, four or more times daily. When the secretion lessens and becomes shreddy, a 2 per cent. solution of protargol may be used at longer intervals. The gonococci may be present even in an eye which does not appear to be inflamed. Protargol is particularly useful to the oculist, as it may be combined with various salts, such as sodium chloride, and is unaffected by cocain, atropin and eserin. It is not decomposed by the albuminous secretions of the mucous membranes, and is the only silver compound at present known which is not precipitated by dilute hydrochloric acid.

Dr. Francis Valk said that so far he had not heard anything which made him feel like giving up silver nitrate in the treatment of this class of cases. Although his experience was largely in a dispensary service, he had obtained remarkably good results in cases of purulent ophthalmia by the daily application to the affected eye of Higginbotham's solution of nitrate of silver. This is a 1 per cent. solution of silver nitrate contain-

ing one-fourth part of sweet spirits of nitre, thus furnishing enough free nitrous acid to prevent decomposition of the solution. Since he had adopted this line of treatment he had not met with a single case of perforation of the cornea with loss of an eye, although, of course, there had been some cases of ulceration.

Dr. F. N. Lewis said that until he had heard this paper he had not felt much disposed to make much use of either argonin or protargol, preferring to continue the use of the old and tried silver nitrate. His experience with protargol had not been very extensive, although he had been somewhat impressed with its effect in the following case in which the application of extract of supra-renal capsule had proved disastrous. The patient had a well-marked gonorrhœal ophthalmia, and the cornea was sloughy and on the point of rupturing when he first saw the case. The effect of the supra-renal extract was to increase the secretion, and also the redness and swelling of the lids, so that after three or four days it seemed wise to discontinue its use. Protargol was then substituted, with the result that the discharge was quickly controlled. But the apparently excellent effect of the protargol in such a case must be discounted because one naturally expects some improvement when the cornea sloughs. The speaker then went on to say that he had been authorized to say that Dr. David Webster had had a similar unfortunate experience with supra-renal extract. It was quite possible that the future would see still better results from the use of argonin and protargol, and they were certainly worthy of further trial. After all, it must be admitted that the chief factors in the successful treatment of gonorrhœal ophthalmia and ophthalmia neonatorum were thorough cleansing and skilful nursing.

Dr. E. S. Thomson said that he had observed the action of argonin in the practice of Dr. Webster, and had noted that in nearly every instance in which it was used the discharge either remained undiminished, or was actually increased. Moreover, the microscopical examinations from day to day did not show any remarkable destruction of the gonococci. In a few cases treated with protargol the results had been better, the remedy apparently being as good a germicide as silver nitrate and much less irritating. It was quite seldom that silver nitrate caused undue irritation, but where it did, protargol might be substi-

tuted to advantage. In other cases he was still disposed to use nitrate of silver.

Dr. Marcus E. Tully said that he had used argonin in a few cases of muco-purulent and catarrhal conjunctivitis. Protargol had proved itself superior to agonin, the latter, in his opinion, being no better than alum. The adverse reports on these new silver salts were probably largely due to our imperfect knowledge of how to use them.

Dr. J. Henry Fruitnight said that he had not been inclined to look favorably on these remedies in the treatment of ophthalmia because of the almost universally unfavorable opinion formed of them by the genito-urinary surgeons in connection with the treatment of cases of specific urethritis. Dr. Peck, however, had presented the case so favorably that he was disposed to give them a fair trial. He would like very much to know if Dr. Peck would favor the substitution of these salts for silver nitrate in carrying out Credé's prophylactic treatment.

Dr. Peck replied that he certainly hoped his colleagues in the Maternity Hospital would substitute protargol for silver nitrate in the Credé treatment of the new-born. He did not believe that it was a better germicide than nitrate of silver, but it was very much less irritating. For example, he had instilled a 10 per cent. solution of protargol into his own eye, and had found it decidedly less painful than a 5 per cent. solution of cocain.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Meeting of December 13, 1898.

Frederick A. Packard, M.D., President.

DEFORMITY OF THE CHEST.

Dr. Bertha Lewis and Dr. F. Massey presented a girl ten and a half years old with a deformity of the chest. The left side was flattened anteriorily, and markedly concave posteriorly; there was also a rotary lateral curvature with a right dorsal major curve and left lumbar rotation. These conditions were induced by the inactivity of the muscles of the entire left side of the trunk, consequent upon the absence of all active lung tissue on that side, and the excessive work done by the right lung and the

muscles of the right side of the trunk. The history showed the child to have had catarrh of the lungs when eight months old, but no definite history of pneumonia could be gained. The heart was drawn well over to the left side, the absolute and relative dulness being almost the same.

Dr. E. E. Graham.—I am much interested in the exhibition of this case, but my interest is more in the line of treatment than in the actual diagnosis in this special child. A number of these cases are seen at all clinics and their treatment is generally very unsatisfactory; the child is given a tonic or sent to an orthopedic surgeon, or it is sent to a manipulator, if the parents are able to pay for such instruction. The movements this child is asked to go through would be extremely interesting to witness.

Dr. S. M. Hamill.—The cardiac condition in this case suggests the report of a case which I abstracted from one of the English journals a few days ago. There was an area of pulsation on the right side of the chest in the fifth interspace just within the midclavicular line. Over this area the heart sounds seemed to be of normal loudness. The area of cardiac dulness seemed to be entirely to the right of the sternum, but could not be delimited on account of the almost complete tubercular consolidation of the right lung. There was an absence of pulsation and dulness in the normal area, with very feeble sounds. At the autopsy the heart was found in the normal position. It was completely covered by the hypertrophied left lung, which extended to the median line. The upper lobe of the right lung was occupied almost entirely by a large cavity, and the lower lobe was consolidated. The abnormal location of the sound was supposed to depend upon transmission through the consolidated lung, augmented by the resonating effect of the adjacent cavity. The cause of the abnormal impulse was not revealed. In the case under consideration there is doubtless some pulmonary condition to account for the extensive abnormal pulsation.

Dr. Lewis then demonstrated movements with the child.

Dr. S. M. Hamill.—I should like to ask Dr. Lewis if in cases similar to this, where such a course seems indicated, she gives any movements directed to the development of certain groups of muscles.

Dr. Lewis.—We do later on. When we have under control the co-ordinated movements of the lower extremities, so that the

child can assume the upright position and maintain that correctly. I think it a mistake to begin asymmetrical movements until you have pretty good control of the extremities with symmetrical movements. So with spinal curvature; I never go on with asymmetrical movements until I have obtained a fair degree of muscular tone and development with the symmetrical movements.

Dr. F. Massey.—I have watched this case carefully for two months. More expansion of the lung and covering of the heart has been accomplished in the last three weeks than in the previous month.

A CASE OF CRETINISM.

Dr. E. E. W. Given presented a case of cretinism. The family history was negative, with the exception of a record of pronounced alcoholism in both parents. There was no history of goitre in the family, but an indefinite history of goitre in the neighborhood in which the child was born (Ireland) was elicited. The child's infancy had been without any notable abnormality excepting that it was always easily provoked to anger. When seen in its twelfth year it held its mouth open; the tongue protruded somewhat between the lips, but was not enlarged. The thyroid gland could not be felt. The skin was rather thick and rough. The hair, however, was fine and silky. The fingers were thick and clumsy, and were the most marked evidence of cretinism that the child exhibited with the exception of weakly mental condition, which was about equal to that of a child of seven or eight years of age, and its small stature, its height being but 101 cm.; its weight too, was but forty-six pounds. The temperature taken at various times was usually about 100 2-5; the pulse averaged about 128; and the respiration 26. It was put upon thyroid upon November 29th, and this was continued until the time of the report. Upon this treatment four pounds had already been gained. The child slept better; its appetite was better; and bowel movement had occurred every day.

Dr. Robertson.—I had the opportunity of watching this case with Dr. Given in my service at the Episcopal Hospital and it seemed to me that we could never dogmatically assert that this is a case of cretinism. Certain it is it does not conform to the mind-picture suggested by the word cretin. It certainly is a case of dwarfism. I think we are justified in treating it with

thyroid, however, for such cases of infantilism bear the same relation to cretinism that gigantism does to acromegaly, that is in both cases they are due to some aberrant glandular function in the one case of the thyroid, in the other of the pituitary. Still there are grounds for regarding this as a case of cretinism, the pendulous abdomen, the large and broad hands and feet, the history of the child having at one time gaping mouth, the impaired intellect, then, again, the fact that the thyroid is probably diminished in size. There is no telling what the histological structure of the gland is. It may be and usually is enlarged in the endemic forms, but in the sporadic forms the thyroid is much diminished in size. That some thyroid function exists, however, is unquestionable, but it seems to me we can only come to a conclusion after the therapeutic test, the use of the thyroid gland.

Dr. D. L. Edsall.—I am interested in the possibility of thyroid treatment having been administered before Dr. Given saw this case, and would ask him whether he has been able to learn whether thyroid extract has been administered or not. I have seen a number of cases of cretinism that had been under thyroid treatment for periods varying from several months to several years before I first saw them, and I am sure had I not known that thyroid extract had been given them, I should have been in quite as much doubt as to the diagnosis as Dr. Given expresses in regard to the case which he presents.

Dr. Given.—As far as Dr. Edsall's question is concerned I have no answer, as I do not know whether thyroid gland was ever given before I prescribed it. I believe, however, that the child had never had any treatment before it was brought to the dispensary of the Episcopal Hospital, and it was brought there chiefly because its stature was so slight that the parents felt ashamed to admit to their friends that the child was twelve years of age.

DILATATION OF THE COLON.

Dr. D. L. Edsall reported a case of dilatation of the colon in a girl ten years of age. The condition of the child upon admission to the hospital was that usually seen in severe dilatation of the colon, the abdomen being enormously distended, and the child's health having suffered severely during the past six months. The condition was due to excessive length of the sigmoid, a long fold running over to the right and causing a

sharp kink in the bowel and thus a certain degree of obstruction. Treatment overcame the condition entirely for the time that the child was under observation and her health improved greatly. Dr. Edsall expressed the opinion that abnormal folding of the large bowel was a cause of dilatation of the colon that must be considered of importance.

ILIO-COLITIS SIMULATING INTUSSUSCEPTION.

Dr. Edwin E. Graham reported a case of ilio-colitis simulating intussusception in a child aged six years. (See page 93.)

Dr. H. A. Hare.—This case seems to me of very unusual interest. In the first place, I think it shows how medical treatment will sometimes result in the recovery of a case which the surgeon would have us believe could recover only under the knife, and I confess that if this patient had been my own I would have called in a surgeon to operate upon it without attempting medical treatment of any considerable length. Some years ago when Dr. Edward Martin and I wrote the Fiske Essay on Intestinal Obstruction, I think we completed that essay with the idea that surgical interference in case of intestinal intussusception did not always have to be carried out promptly, and I think our views upon that occasion were based on a theoretical consideration of the literature on the subject rather than on practical experience. As my examination of the literature has been dwarfed by retrospection and increasing personal experience I am inclined to believe that any other interference with cases of intussusception than operation is depriving a patient in the majority of instances of a chance for recovery which he might have. I do not understand how Dr. Graham made the diagnosis between the case being prolapsus and intussusception of the mucous membrane of the rectum, and I understood him to emphasize the fact that in a number of occasions fæcal matter was passed. I suppose that was emphasized by Dr. Graham because in established obstruction no fæcal matter could come down through the bowel. On the other hand, the child had a large number of movements day after day, and it is not possible that the lower bowel could have contained so large a quantity. If I saw a case to-night of prolapsed rectal mucous membrane, I am not sure that I could differentiate it from intussusception.

We learn more and more clearly the fact that purgative treatment is of no advantage where we find the bowel is blocked.

I do not think I have ever seen a fatal case of volvulus without necessity for regret that the attending physician had been so free with his purgatives. We should guard against delay in resorting to operative procedures and, second, the free administration of violent cathartics, and I am also sure from a somewhat limited but still increasing experience that operative interference, if resorted to early, cannot do any harm and may do an immense amount of good, so that I am inclined to look upon surgical treatment with greater favor than medical interference. I had a case about three years ago in private practice in which intestinal obstruction due to inflammatory adhesion was present, in which Dr. Kelly operated and in which Dr. Martin and myself used high colonic irrigations in Dr. Kelly's presence. No good results were produced and when a second operation was done to liberate the gut it was found that nothing of this character of irrigation could have availed. I am inclined to think that in volvulus or intussusception only in a very small proportion of cases is irrigation of much value. I think, too, the method recommended by Mr. Jonathan Hutchinson, published ten or twelve years ago in the *Archives of Surgery*, in which he instituted what is known as the "Shakewell" treatment, in which the bowel was filled with water, the patient inverted and held upside down by two policemen and well shaken, had absolutely nothing to commend it except Mr. Jonathan Hutchinson's great reputation. Within the last twenty-four hours I have read a paper by a very eminent surgeon in which this so-called "Shakewell" treatment has been condemned in the strongest terms. These facts are perhaps not germane to Dr. Graham's paper, but I hardly feel inclined to let this opportunity pass without saying that I would have called in a surgeon without such delay as Dr. Graham permitted. The mere fact that the child got well without surgical interference is of course the most convincing answer to this view. Out of 100 cases it seems to me we should have a comparatively small percentage in which the results would be so good.

Dr. E. E. Graham.—I agree very largely with what Dr. Hare says in regard to giving purgatives and I gave my first purgative before I thought there was any actual obstruction of the bowel. In regard to the diagnosis, in my paper I say: The facts leading to the non-diagnosis of intussusception are, absence of abdominal distension, absence of severe paroxysmal pains,

presence of symptoms of collapse, passing of gas by rectum, absence of prolapsed mucous membrane after the appearance of formed stools. I have seen a number of cases of intussusception in the past few years, and am firm in my belief in the correctness of the diagnosis in the present case. In regard to obstruction of the bowels I have looked the matter up very closely so far as the standard articles on the subject are concerned and I cannot find any case corresponding to the one here reported. The ordinary causes of obstruction are always enumerated and the word enteritis is used in an article written by Dr. Keen, who narrates a case very similar to that related by Dr. Hare, in which through inflammation the mucous membrane of the bowel had become more or less adherent. The fact that prolapsed mucous membrane could be distinctly felt makes the diagnosis clear to my mind, as I cannot possibly conceive how formed stools would pass through an intussusception unless the intussusceptum had left the intussuscipiens.

In regard to the question of tumor, I cannot agree with Dr. Griffith. I have seen a careful surgeon pass two fingers into the abdominal cavity and fail to find an intussusception. The majority of cases of intussusception have, after the first two or three days, an enormously distended abdomen. In the case I speak of it was not an easy matter for the surgeon to find the intussusception, in fact the incision had to be enlarged and the bowel drawn out before the intussusception, which was enteric and three inches in length, could be discovered.

A CASE OF INTUSSUSCEPTION.

DR. F. A. PACKARD reported a case of intussusception in a child aged nine months, in which on the second day of the illness, reduction was effected under the influence of ether by the injection of normal salt solution from a height of three feet. Prompt and complete return to normal conditions followed the reduction.

DR. HARE.—I would speak of an interesting attachment that could be made to the apparatus which Dr. Packard advocates. It is a simple U-shaped tube filled with mercury. We use a Y-shaped tube running from the glass ends into the rectum. The Y-shaped tube receives fluid and the U-shaped tube registers pressure, and if at any time the pressure exercised by the bowel is more than the hydrostatic pressure it will also register

its pressure upon the mercury in the U-shaped tube. I believe in introducing the liquid gently, so that the hydrostatic force will overcome the mechanical obstruction by a gradual relaxation of the muscle fibres, rather than by suddenly exercised force. As soon as resistance takes place, the flow may be stopped instantly and as the spasm ceases the clip can be loosened and the flow gently renewed, and if this is done I know that a larger quantity of fluid can be gotten into the bowel and retained than if it is not done. I know in experiments in the lower animals that we attempted during a cholera epidemic abroad that it was possible to flush the entire alimentary canal, but unless we used a manometer of this kind the spasm of colon became so great that it was practically impossible to use enough fluid. If we used this manometer and simply allowed the fluid to flow in when the abdominal walls were not resisting the flow, after a time there would be a gurgling sensation and a very few minutes later fluid would gush out of the mouth, proving that by gradual pressure we could overcome resistance. I was glad to hear Dr. Packard say that hydrostatic pressure should be only three feet above the patient's buttocks. There has been much discussion as to the height to which the reservoir may be elevated above the patient. In a recent book on Practice we were instructed to hold the syringe from twenty to thirty feet above the head of the patient; evidently this was a typographical error in the first edition which is perpetuated in the second. The twenty or thirty feet would have given such a pressure that it would have ripped things up from one end to the other. Dr. Senn in a published paper claimed that a pressure of more than five feet would produce rupture of the peritoneal coat of the gut, if it did not cause rupture of the other coats. In the experiments by Dr. Martin we found we were unable to produce rupture of the gut in lower animals with such pressure.

Dr. Hammond.—I should like to ask Dr. Packard if the intussusception was low down. I believe when the intussusceptum is in the lower flexure it really is a medical case, for the first forty-eight hours at least. In cases in which the intussusception is higher they are obviously much earlier surgical cases, and the matter of early differentiating the location will save much time and probably life, giving opportunity to call the surgeon early when the intussusception is high up; while when lower the case may be trusted to medical efforts longer.

Dr. F. A. Packard.—In regard to this question of injections I spoke last year in a paper read before this Society and have nothing to add, but wish to repeat that it seems to me to be the greatest folly to state that you may raise the reservoir three feet on the first day, but that, if your case is of five or six days' standing, you may travel up-stairs with the reservoir until you get at the top of the house. The child's bowel is presumably in better shape to stand pressure without ripping in the first few days than on the fifth or sixth day. While I do not believe it is justifiable to use high pressure at any time it is more dangerous after five or six days than at first, as at the former time pathological changes have certainly occurred that lessen the resistance of the bowel wall which, even when healthy, can be ruptured by too great a pressure.

The Anatomy and Treatment of Flat-foot.—Long, narrow feet are, according to Clarke (*Lancet*, April 23, 1898), the most likely to become flattened from pressure on the highest part of the arches, so that in extreme cases the whole of the inner border of the foot rests upon the ground. The treatment adopted by the author consists in wearing boots properly shaped —*i.e.*, having soles that are sufficiently wide anteriorly for the toes. They are furnished with pads of vulcanized rubber, so formed that the highest part falls in front of the transverse tarsal joints. In addition an outside leg-iron, jointed at the ankle and supported by an inside T-strap, is applied in some cases. Manual wrenchings and douchings are also helpful, and as soon as sufficient improvement has been obtained suitable exercises may be begun. These exercises are useful, and in suitable cases may alone suffice: (1) Rising on tip-toe a definite number of times, the toes being inclined inward. (2) Adduction of the foot, repeated several times. (3) Walking for a short time daily on the outer border of the foot. Another form of flat-foot that often demands complete rest for a time is that observed in active rickets. Every case requires its own management of complications, of which hallux valgus and hammer-toe are the commonest. To correct these deformities the author employs a metal sole of proper shape, with a toe-post to hold the great toe in position, and slots for the insertion of a soft bandage which holds the other toes in their proper position.—*American Journal of the Medical Sciences.*

Current Literature.

MEDICINE.

Bovaird, David: Scurvy in Infants. (*Philadelphia Medical Journal.* 1898. Vol. ii. No. 8.)

This paper is an analytical review of cases of scurvy reported since the publication in 1894, by Northrup and Crandall, of their paper on scurvy. That paper was the only one containing a detailed account of a considerable number of cases published before the report last spring by the American Pediatric Society. The author attempts to supplement that paper by a review of the cases found in literature since 1894. He evidently wrote before the publication of the report of the American Pediatric Society.

He reports 64 cases. Of these 64 children the youngest was six months old, the oldest two and one-half years; the average age was twelve months. Only 4 were more than eighteen months of age, and 35, or 54 per cent. were from nine to thirteen months old. Of 50 cases in which the sex was noted, 24 were in girls, 26 in boys.

Forty-five of the cases were seen in private practice; 12 only at hospitals or dispensaries; in 7 there is no reference to this point.

In only one case, were the surroundings so bad as to call for special remark. In many the hygienic conditions were of the best. The reports come from all parts of the country. It seems evident that even the most healthful surroundings cannot in themselves prevent the development of scurvy.

Pain is noted in practically all of the cases. In nearly all there is a definite statement of pain elicited by motion or touch of the affected limbs. In most cases the pain is so severe that the patients watch with anxious eyes every motion of the observer and scream loudly on the first attempt at examination. Unwillingness to move the limbs, sometimes termed pseudo-paralysis, sometimes disability, was noted in 28 of the 64 cases. In 49 cases the affection was bilateral; in 9 unilateral; in 1 case there was no lesion of the extremities; in the remainder the location of the lesion was not specified. Although both sides

of the body are usually involved, one is affected earlier and more severely than the other. The legs were affected in 56 cases; the arms in 8 cases, but never without an accompanying affection of the legs. In 8 cases there was either no affection of the extremities, or no definite statement on this point. In most cases the affected part is reported to have been swollen and in many deep thickening of the limb was noted.

The mouth-symptoms are hardly less characteristic of scurvy in infants than the pains in the extremities. Of the 64 cases, 52 presented a definite affection of the gums; in 2 cases the record is incomplete in this respect; in 10 the gums were normal. Of the latter group two cases have a definite record of absence of teeth; in a third, the child being but six months old, the same may be inferred. One case is of peculiar interest, for, although two teeth were present, and the child was suffering from pains in the extremities and ecchymosis (all of which yielded promptly to antiscorbutic treatment), the gums were normal. In the remaining 6 cases of this group there is no statement regarding the teeth, although the ages range from nine to ten months. The condition of the gums is variously described as spongy, or swollen and purple, congested and bleeding, ecchymotic, or ulcerated. In these terms various degrees of the same process are evidently described. The process begins as a simple congestion about the roots of the teeth present. As the congestion deepens, diapedesis occurs and the gums become swollen, softened, purple, and bleed easily, the condition usually described as spongy. If the affection persists slight injury may cause ulceration and a condition of ulcerative stomatitis is seen. In the worst cases the swelling of the gums has been sufficient to prevent closure of the mouth. In some cases the mouth-symptoms have been the most prominent feature, usually they are noted only after examination.

It is interesting to note that the pathological basis of these apparently different symptoms is the same. The pains in the extremities, as the autopsy-reports of Barlow, Northrup and others show, are due to hemorrhages beneath the periosteum. The mouth-symptoms are due to a similar hemorrhagic process in the gums.

There may be hemorrhages in other parts to fortify the diagnosis. Twenty-one cases presented a hemorrhagic affection of the skin, designated variously as hemorrhage, petechiæ

or purpura; in 3 cases hemorrhage into the orbit produced the familiar "black eye"; while bleeding from the nose, stomach, bladder, intestines is recorded, and one case is said to have shown hemoglobinuria.

Anemia is recorded 14 times, marasmus 7. The more recent do not give such prominence to anemia and emaciation as the earlier reports. In a number of cases the records declare that apart from the leg-pains and spongy gums, the infants appeared quite well, were even plump and rosy.

Fever was noted as present in 8 instances. In 2 of these the record is remarkable, in 1 the temperature reached 105° F., and in the other 106° F. In both the elevation of temperature was ascribed to the scorbutic affection, and no other explanation was afforded. In the other cases the fever recorded was slight, in correspondence with previous reports.

The condition of the alimentary tract is referred to in only a few cases—vomiting, constipation and diarrhœa being each reported in several instances.

The relation of scurvy to rickets has from the first been of interest. In 38 of the records there is no report on this point; in 16 cases rickets was present, in 10 definitely absent. In 5 of the 16 cases in which it was observed the rachitic affection was severe, in 11 slight. No argument, the author acknowledges, can be founded upon these figures, but the fact that in 60 per cent. of the reports there is no mention of this point shows clearly that the doctrine of a close relationship between rickets and scurvy has made but a slight impression.

The most interesting feature of these reports lies in the feeding of the scorbutic children. The substance of the reports can best be presented in tabular form, as follows:

Proprietary foods (including condensed milk),	32
" " and sterilized cow's milk,	4
" " and fresh milk,	1
" " animal broths and milk,	1
Cow's milk (very dilute mixture),	1
" " (milk and cream mixture),	1
" " sterilized,	15
" " " and flour,	1
" " and porridge (very dilute),	1
Oatmeal gruel,	1
Graham gruel and milk,	1
Bread and butter, sweet potatoes and bananas,	1
Breast-milk	3
Not stated,	1
	64

In all but 2 of the cases the sterilization was accomplished by boiling the milk; in 1 of these cases 180° was the limit set in heating, in the other the milk was regularly pasteurized at 167°. In the latter case the reporter states that he considered the proportions of the milk, which were 3.50, 6.50, 1.00, to be the cause of the trouble, and that the child promptly recovered when the formula was changed to 4, 7.10, 2, the milk still being pasteurized! In 1 case it is said that the child, having developed scurvy on a diet of sterilized milk, treatment was begun by simply giving it orange-juice; but little progress was made, until pasteurization was adopted instead of sterilization, when rapid gain ensued. On the other hand 2 cases are reported to have recovered when sterilized milk was substituted for a proprietary food. In 2 cases recovery followed a change from sterilization to pasteurization.

Sterilized milk would seem by the report to have caused and to have cured scurvy. The author believes that further evidence must be obtained before sound conclusions can be reached with reference to its influence.

Three interesting cases are those of children who were said to have been nursed. In one the reporter states that under supposition that the child was suffering from specific taint, both mother and child had been kept for several months strongly under the influence of mercurials. Analysis showed the mother's milk to be deficient in every respect. In the second case details are not given. In the third case, which was reported in detail, the reason for the occurrence of scurvy is very obscure.

From the cases here tabulated two inferences seem to the author to be justified:

1. The contention that there is no evidence that scurvy has been caused by sterilized milk must be given up. The evidence presented is not considered conclusive, but it renders it highly probable that persistent sterilization of the food by boiling may produce scurvy.

2. It must even be admitted that scurvy may develop in nurslings.

The admission of this proposition carries with it a frank confession of inability to accept as wholly adequate any theory of the causation of scurvy thus far advanced.

Griffith, J. P. Crozer: Typhoid Fever in Infancy and Childhood. (*Philadelphia Medical Journal.* 1898. Vol. ii., No. 16.)

In a clinical lecture delivered by invitation before the University and Bellevue Medical College of New York, the author presented a systematic review of this important subject. As to etiology, it is now well known, the active, direct cause of the disease is a germ—the typhoid bacillus of Eberth. Just how this gains entrance to the system is not known in every case. It is certain that in the vast majority of instances it enters through the digestive tract. Oftenest the germs are conveyed by food and water. A large number of reports of milk-epidemics have been published, and it would seem that infected milk is probably the cause of many cases of the disease in children. That more children are not attacked is probably due to the common practice of cooking the milk in some manner. The most important etiologic factor to be considered is that of *age*. Fifty years ago the occurrence of typhoid fever in children was entirely ignored by nearly all writers. Now it is admitted that the disease does occur, and even frequently, in children, but it is still claimed by many that under the age of five years it is uncommon, and under two years decidedly so. DeGassicourt found among 276 cases in children only 3 as young as two years; Vogel only 4 in the first year of life among 1,017 collected cases in children; and Morse no patient as young as two years among 284 cases occurring under the age of fifteen years. Holt says he has never seen a case in a child under two years of age. Bouchut denies that typhoid fever occurs in the new-born. Berg, in analyzing 1,626 cases occurring in Curschmann's clinic, found only 5 in children as young as two years of age. Filatow found no cases in children as young as two years among 106 cases in children up to thirteen years. He contends that children under two years are very rarely attacked by the disease, and those under one year almost never. Northrup found no case showing the lesions of typhoid fever in over 2,000 autopsies upon children mostly under two years of age.

Yet, in spite of these statistics, which would seem to indicate the rarity of typhoid fever in early life, an increasingly large number of cases are reported as occurring in the first two years of life.

Yet, while maintaining that typhoid fever is more frequent

in infancy and early childhood than has been ordinarily supposed, there is no reasonable doubt that it is decidedly less frequent than in later life.

SYMPTOMS.—The principal features of typhoid fever, as usually seen in children—but of course with numerous exceptions—are an indefinite and uncharacteristic onset, a much greater mildness of the attack, a distinct tendency to a shorter course, and a disposition for nervous symptoms to overbalance intestinal manifestations.

It happens oftener than in adults that the disease begins suddenly, and that in the course of only a few days the attack is in full swing, and even that the characteristic spots may be present. This is particularly prone to be true of young children. Yet more commonly the onset is so slow and so insidious that this, with the mildness of the attack, renders it impossible to decide just when the child was taken ill. Such children continue to walk about, with loss of appetite, possibly headache, and some slight malaise; until, after some days of observation, with watching of the temperature, the physician is forced to the conclusion that he is dealing with typhoid fever, and not with a disturbance of digestion merely.

The temperature, when typical, is as in adults, but it tends to vary from this greatly. It may rise suddenly. Often it runs a most irregular course, especially in infants. During the acme of the disease the temperature often remains high, with but little variation between the morning and the evening elevation. The remittent type, so characteristic of the last portion of typhoid fever in adults, is liable to be absent or greatly curtailed in children. According to Morse's statistics, the remittent character is absent in about half of the cases. The temperature may even fall almost by crisis. After reaching normal it may be temporarily elevated again by entirely insignificant causes. Abortive types of the disease are common in children, the fever lasting sometimes not more than a week. The total average duration is certainly shorter in children than in adults. Roughly speaking, it averages from fourteen to twenty days; sometimes in severe cases it is decidedly longer. Wolberg found the average duration of pyrexia fourteen days in 28 cases in children under five years of age, and 17 days in 249 cases in children from five to twelve years of age.

Headache is quite common, especially at the outset; but

even then it is likely to be slight and to disappear soon, and many children remain through the entire attack in the best of spirits, and evidently do not feel at all ill. There is not infrequently slight delirium, especially at night, or sometimes screaming in young children. In severe cases delirium may become very pronounced. A decided degree of apathy is sometimes noted. In young children this constitutes one of the most important diagnostic symptoms. But the extreme apathy, the subsultus, the stupor, the coma vigil and coma, which are so common in adults, are rarely seen in children.

With regard to the typhoid roseola, the claim is often made that it is much less likely to occur in children than in adults, and that it is not so well developed in the former. In the author's experience, however, it appears to be just as frequently present as in later life. In the 671 cases of typhoid fever in children collected by Morse, roseola was found in 406, or 60 per cent. The number of cases in which the rash is present at some time during the attack, but is overlooked, certainly increases considerably the actual percentage over those that statistics give. Baginsky thinks the eruption seldom absent, and the spots were absent in only 19 of Henoch's 381 cases. The occurrence of a desquamation in infants with typhoid fever has been reported in a number of instances by Weill and others.

Enlargement of the spleen is always present, although not always discoverable. Statistics indicate that it can be detected in about 80 per cent. or 90 per cent. of all cases in children.

Drying of the tongue is much less common than in adults. Vomiting is a frequent initial symptom. Even later in the attack vomiting is more common than in adults. Very obstinate uncontrollable vomiting is reported by Moussous in 2 cases, lasting in one instance eight and in the other ten days, almost without intermission, yet followed by recovery. The author has seen one case, running a course rather mild than severe, develop at last uncontrollable vomiting lasting for days and ending in death.

The condition of the bowels is variable and appears to bear no relation to the severity of the disease. Constipation is frequent, although what proportion of cases suffer from it rather than from diarrhœa is disputed. On the whole, statistics would indicate that the one condition is about as frequent as the other. Certainly severe diarrhœa is not of common occurrence. One

important characteristic of the evacuations from the bowels is to be noted, viz., the rarity of intestinal hemorrhage in children with typhoid fever. This is a matter upon which all writers are agreed. In 553 cases of the disease in children, collected by Morse, only 9, or 1.6 per cent., exhibited hemorrhage. When it does occur it is generally but slight. It is particularly rare in children under ten years. When the ordinary symptoms of the disease are present there is, of course, no doubt. Usually, however, we do not have in children such a well-marked group to depend upon, and we must sometimes reason by exclusion chiefly, especially in infants. A continuous elevation of temperature without any local lesions to account for it, and without the demonstrable presence of any other disease, awakens a strong suspicion that typhoid fever is present. Of course there occur in children cases of "simple continued fever," as it was formerly often called for want of a better name—cases in which fever lasting from one to three weeks develops without discoverable cause. Many cases that have been described as fever of this sort were, no doubt, instances of typhoid fever.

In the diagnosis, meningitis must be carefully excluded. Time will help greatly in this matter, for typhoid fever rarely if ever goes on to the production of the symptoms of the later stages of meningitis. Enterocolitis has its own characteristic symptoms, which will finally make the diagnosis clear in nearly every case. Malaria can be recognized by an examination of the blood. Influenza, when not of the nervous type, may cause some trouble in diagnosis; but, as a rule, it has distinctly characteristic symptoms. Especially in infants one must keep in mind the possibility of a continued fever depending upon a toxemic state produced by obstinately disordered digestion.

The *pathologic anatomy* of typhoid fever in children has certain distinct characteristics. The mesenteric glands are nearly always much swollen. According to Malian, this swelling is very pronounced in children. There is, as a rule, much less tendency than in adults to the production of ulcers in the intestine. The process is rather a hyperplastic one, the solitary and agminated glands assuming a reddish or pinkish color, and projecting somewhat toward the lumen of the gut. It is probably owing in part to this lesser degree of intestinal involvement that the disease is prone to run a shorter course in children, and the temperature to drop more rapidly. Yet some degree of ulcera-

tion is not infrequent. This is, however, usually superficial. It must be borne in mind that many diarrhœal affections in children, and especially in infancy, are prone to exhibit after death swelling and ulceration of the agminated and solitary glands, and that the diagnosis of typhoid fever cannot be based upon these findings alone. Sometimes the ulceration of typhoid fever in children is very extensive.

RELAPSE would appear to be about as frequent in childhood as in adult life.

Of *complications* and *sequels* may be mentioned otitis, which is more common in childhood than in adult life, and nephritis, which is probably much less common than in adults, although small amounts of albumin in the urine are not rarely found. Chorea follows not infrequently. It is generally agreed that aphasia is a much more frequent sequel than in adults. Usually it is only temporary. Henoch found complete aphasia in 20 of his 381 cases, and partial aphasia in a number more. On the other hand, temporary post-typhoid insanity, quite often seen in adults, appears to be decidedly uncommon in childhood.

The *prognosis* of typhoid fever in children is on the whole, good—much better than statistics would indicate, since so many of the milder cases are probably never recognized. In the 192 children under fifteen years in the Stamford epidemic, as reported by Schavoir, only 2 died, a mortality of but 1 per cent. This, however, seems exceptionally low. Of 137 cases occurring in the Children's Hospital of Philadelphia during the last ten years, death resulted in 3—a mortality of but 3.66 per cent. In the 3,396 adult cases of the Boston City Hospital, as reported by Morse, the mortality was 13.5 per cent., while in the 284 cases in children under fifteen years the mortality was but 6 per cent. In 2,623 cases in children, collected by Holt, the mortality was 5.4 per cent. As this writer truly remarks, these figures, being taken chiefly from hospital statistics, do not represent the milder cases; so that the mortality-percentage of all cases in children should certainly be less.

The rate of mortality seems to increase with the age, children under five years being less likely to die than those above it.

TREATMENT need occupy but little attention, as there is little to be said that does not apply equally well to adult life. Medicinal treatment is purely symptomatic, as in adults, and is less often needed. Rest in bed is, of course, required, no matter

how much the child wishes to be up. A milk-diet is to be preferred. No purgatives should be given to overcome constipation, enemata being employed in place of them. With regard to the use of the bath, careful judgment is to be employed in giving it to children. Some do not bear the plunge at all well. This is particularly true of younger children. Certainly there is, as a rule, for no period of childhood the need to use water at as low a temperature as in the case of adults. At the Children's Hospital of Philadelphia it is the custom to employ the graduated bath, placing the child in the tub with the water at a temperature of 95°, and cooling it down to 85°, or occasionally, with older children, to less than this. In nearly all cases this is quite as effectual as the cool bath, and much less likely to cause excitement from fright. Very frequently, indeed, sponging answers every purpose. Even a tepid bath may sometimes answer well. It must be remembered that many children bear elevated body-temperature remarkably well, and that the disease in childhood is likely to run a shorter course. We can, therefore, often afford to let the fever alone. If it is true of adults, it is still truer of children that hydrotherapy is not to be used as an unalterable plan of treatment, no matter what its effect, and merely because the temperature has reached a certain figure. If it is used according to any such method, it is capable, particularly in children, of doing often far more harm than good.

Yale, Leroy M.: The Heating of Milk Used for Feeding Infants. (*Canada Lancet.* 1898. No. 6. *Medicine.* Vol. iv., No. 9.)

Whether the mixture shall be sterilized is a vexed question. On the one hand are presented bacteriological studies and some clinical experiences to show that milk cannot be made safely sterile for infant feeding below 90° C. (184° F.), and that 100° C. (212° F.) is better; that with pasteurization, 75° C. (167° F.), or lower, accidents frequently happen to the milk, and not infrequently gastro-enteric disturbances, more or less acute, occur, due to milk poisoning. On the other hand, there is a growing distrust of sterilization and even of pasteurization, as a possible cause of malnutrition, especially of scurvy.

There is no doubt that both sides present facts, but it seems to the author that much depends upon the point of view. The necessity of thorough sterilization at high temperature seems to

be most held by those having large outdoor clinics, where the difficulty of enforcing details is greatest. Those having affairs more in hand see the other side more clearly. There is no doubt that the one party can show cases of peculiar susceptibility where uncooked milk prepared in the best laboratories cannot be digested. The other party produces cases of scurvy in which the cessation of symptoms followed the cessation of the sterilization.

Whatever increases the chance of bacterial contamination or multiplication, whether poor milk-supply, want of reliability of those in charge of the food, heat, unsanitary surroundings, or what not, is an argument in favor of sterilization, and the thoroughness of the sterilization is to be in proportion to the probabilities of contamination. Practically, in cities, the ordinary milk-supply must all be sterilized, at least in warm weather.

Durante, Durando: Raynaud's Disease in New-Born Children. (*British Medical Journal.* 1898. No. 1972. *Méd. Infantile.* 1898. No. 7.)

The author reports two cases of fatal symmetrical asphyxia of the extremities (one ending in extensive gangrene) in children of syphilitic parents. He does not look on syphilis as the cause of the disease, which he considers to be a purely nervous affection. The rarity of this disease, especially among children, makes the cases very interesting. A necropsy on one of them revealed nothing peculiar.

Gilchrist, T. Casper: Pediculosis and Scabies. (*Gaillard's Medical Journal.* 1898. Vol. lxix. No. 5.)

Pediculosis with or without a consequent pustular eczema is a common disease of the scalp in school children. When the patient comes to us we can usually detect the presence of isolated or confluent pustules and scabs, especially over the posterior portion of the scalp and accompanied by enlarged cervical glands. The diagnosis is easily made by examining the scalp for pediculi or nits. The latter at once give the clue to the nature of the disease. The nit, which is a small, pear-shaped body, is glued to the hair, and a futile attempt to flick it off demonstrates the fact that it is not dandruff, scales of which often closely resemble nits.

The treatment consists in destroying the pediculi and nits by means of petroleum; if this is done the pustular eczema will soon get well under simple treatment.

Impetigo contagiosa may be defined as an acute inflammatory affection of the skin, characterized by the formation of vesicles, which soon become pustules, and the rapid formation of sticky, yellowish, moist, discrete and confluent scabs, situated particularly on the face, fingers and hands. It occurs in children and is often passed from one school-fellow to another.

During the last seven years the author saw over 700 of these cases, and asserts that so far as children are concerned it is almost as common as eczema. When a child has this disease complete isolation is not necessary, but the child should certainly be kept away from school until it is cured, as, unless great care is exercised, it will prove a source of contagion to the other children.

Scabies is another contagious disease often mistaken for eczema. It is an affection which is apt to spread more among members of the same family; but a child having this disease is a source of contagion to others, and should be kept away from school.

To sum up, it is of the utmost importance that far more attention should be paid to the diagnosis and treatment of ringworm of the scalp, and especially to the condition characterized by scaly dandruff-like patches. Any child, indeed, who is found to have a scaly or pustular affection of the scalp or face should not be allowed to attend a public school unless he can show a written certificate from a physician stating that the disease is of a non-contagious character. Physicians should not be too ready to diagnose as eczema a disease of the scalp which is secondary to parasitic infection, and should never pronounce a case of ringworm of the scalp to be cured until a very thorough examination has been made for stubby hairs once a week for three weeks after treatment has been stopped. It is desirable that all teachers in our public schools should be instructed to keep away children who have any bald patches or any scaly or scabby condition of the scalp or face, or, in fact, any skin affection, until they have received a doctor's certificate that the disease is non-contagious.

Eross, J.: Follicular Tonsillitis in the New-Born. (*Wiener Medizinische Presse.* 1898. No. 8. *Medicine.* 1898. Vol. iv., No. 10.)

The author says that this affection is not rare. He has observed twenty-two cases. The diagnosis is not frequently

made. Symptoms are not sufficiently pronounced to prompt the physician to examine the throat, so that the diagnosis was made accidentally.

Of the twenty-two new-born children examined the condition was found twice at the end of the first day, and twice on the second day, nine times on the third day, four times on the fourth day, four times on the fifth day, and once on the seventh day; thus it is seen that the disease is most frequent the third to the fifth day. Just at about this time the child is susceptible to catarrhal inflammations; thus we have such processes in the mouth and the gastro-intestinal tract.

The local signs of the affection are not marked. The anatomical changes are superficial, occur on the mucous membrane, and do not involve the parenchyma of the tonsils. In some of the cases the disease was bilateral and in others unilateral. The swelling was insignificant and occurred about the inflamed follicles. Swelling of the mucous membrane of the pharynx or of the nasopharynx such as occurs in the follicular tonsils of older children was not observed. The disease appeared in the form of small nodules of a snow-white color, most frequently the size of a pin-head, seldom as large as a lentil. Later the nodule changed and became of a yellowish color. There were seldom more than five or six nodules on one tonsil. They never became confluent so as to form a membrane. The exudate usually disappeared in from one to three days, and the mucous membrane presented its normal appearance. Ulcerative processes did not occur. In consequence of the small amount of anatomical change which occurred the little patients did not suffer from respiratory difficulty or from difficulty in swallowing. Fever only occurred in eleven cases. The highest was from 38° to 39° C. and lasted from a day to a day and a half.

Engelmann, Rosa: One Hundred Cases of Laryngeal Diphtheria. (*American Gynæcological and Obstetrical Journal.* 1898. No. 9.)

Of these cases, 47 were treated by intubation; 59 were males, 41 females. Antitoxin was given to all cases, but in some cases very late; fifteen cases were under two years of age. The entire mortality for 100 cases of croup, for all ages inclusive, is 31 per cent., while for the 47 intubated cases it is 38.29 per cent., and for the 53 not intubated cases it is only

24.42 per cent. The majority were slum cases with poor environment and almost no care.

There were 15 cases of primary laryngitis requiring intubation, and 12 cases of primary laryngitis not requiring intubation, or a total of 27 primary cases.

There were 32 cases of secondary laryngitis requiring intubation, and 41 cases of secondary laryngitis not requiring intubation, or a total of 73 secondary cases.

Vierordt's comparisons as to the occurrence of secondary laryngitis in the pre-antitoxin and post-antitoxin periods in 23 and 24 cases, respectively, establish that in the first epoch 9 cases appeared, while not one did so in the second, although one child developed a slight cough three days after antitoxin was given.

A mild type of disease	was	manifest	in	2	primary	cases.
" moderate	"	"	"	13	"	"
" severe septic stenotic	"	"	"	12	"	"
" mild type of disease	"	"		4	secondary	cases.
" moderate	"	"	"	12	"	"
" severe septic stenotic	"	"	"	57	"	"

The greatest number of times a tube was expelled in any one case was 19, the next 6, and 4 times in 2 cases, 3 times in 10 cases, twice in 14 cases, and once in 3 cases. In all other cases it was extracted.

The minimum number of hours the tube was worn in the author's series of 47 cases was 7, and the maximum was 548 hours, or 22 days, 10 hours; the average was 87 hours, 58½ minutes, or 3 days, 15 hours, 58½ minutes.

Colburn, Joseph Elliott: Congenital Nystagmus. (*The Chicago Medical Recorder.* 1898. Vol. xv., No. 1.)

The author reports 19 cases of this condition, from a study of which he draws the following conclusions:

First. Congenital nystagmus may be due to amblyopia from any cause, or from ametropia.

Second. Congenital nystagmus may occur in atypic development of the eye and its appendages, and be due wholly or in part to the exhaustion or irritation of the motor oculi muscles or their nervous centres in their attempt to co-ordinate with the other acts of vision.

Third. In treating cases due to amblyopia from errors of re-

fraction, the correction of the errors may lessen or completely cure the spasm.

Fourth. Those cases which are due to amblyopia from other causes than errors of refraction, may be relieved directly as the cause of the amblyopia can be removed.

Fifth. The causes which are due to atypic development of the eyes or their appendages, may be relieved so far as we are able to properly establish them in normal relation to each other and their surroundings.

The remedies of service in my hands have been, first, carefully correcting errors of refraction and the placing of the correcting glasses in the best position to secure the best vision. Second, training the eyes to perform their ranges of rotation with the head fixed. Third, operations upon the recti muscles to secure full abduction, adduction and central fixation with eyes at point of greatest rest.

Tubercular Pharyngitis in a Child. (*American Medico-Surgical Bulletin.* 1898. Vol. xii., No. 18.)

The report of the Sound View Hospital, Stamford, Conn., cites the case of a girl aged ten, who had been suffering for months from pronounced anæmia and tubercular pharyngitis.

Microscopical examination of her blood showed a highly impoverished condition, with not over 1,500,000 red corpuscles to the cmm., and hemoglobin barely three-fifths of normal standard. Examination also revealed numerous tubercle bacilli lining the fauces, tonsils and pharynx. Patient presented, besides, all the general symptoms of well-defined anæmia. Temperature was 100.4°, not varying more than one-fifth in twenty-four hours; showing constitutional absorption.

The patient was put on a teaspoonful of bovinine in milk every two hours, and a light, easily-digested, and nutritious diet; 1 min. beechwood creosote and 10 min. oil of cinnamon every three hours; also 1 dr. of elixir purgans night and morning, to regulate the bowels. The throat was cleared of septic matter with peroxide on bovinine, followed by a Thiersch gargle. With a small tenaculum the papillæ were picked up and snipped off with scissors. Bovinine-peroxide and Thiersch gargle were used again; then, by means of a long cotton-carrier, the pharynx and fauces were thoroughly swabbed out with peroxide on bovinine. This treatment was repeated twice

a day for eleven days; when no papillæ were discoverable, and the throat, except the tonsils, presented a healthy appearance. The tonsils, being tremendously hypertrophied and almost like scar-tissue, were excised. Following this, the nurse was directed to apply the bovinine-peroxide and Thiersch gargle three times a day. In ten more days the stumps of the tonsils were thoroughly covered and healed, and the throat was in a normal condition. The bovinine was then increased to two teaspoonsful in milk every two hours. Two weeks later the patient was discharged cured.

HYGIENE AND THERAPEUTICS.

Carr, Walter Lester: The Treatment of Broncho-Pneumonia Complicating Measles. (*Medical News.* 1898. lxxiii. No. 21.)

The author refers to the necessity of extreme care in the management of young infants suffering from measles, as the danger of an invasion of pneumonia is great. In case that disease develops, however, counter-irritation to the chest by means of a mustard paste, one part mustard to four or five of flour, or a mustard bath at a temperature of 95°–100° F. will ease the labored breathing, lessen the congestion, and calm the nervous system. Early stimulation to the chest is never to be overlooked, but care must be taken that the delicate skin of the infant is not blistered. The first evidence of the rapid breathing and cyanosis calls for oxygen and it does greater good than when administered late in the disease. The oxygen is to be given freely and its effects noted. Poultices are not to be applied, as their weight and the need for constant renewal are reasons why they are harmful in a disease that is protracted and accompanied by weakness and depression. Jackets of flannel and of flannel and oiled silk are much better than poultices, as the skin under them can be cleansed.

Steam alone or with oxygen will prove of service in many cases, but to envelop a child with steam until the skin is covered with moisture is not conductive to comfort or well-being. The steam is to be given for a few minutes at a time when the breathing is difficult or when the mucus secretion is tenacious and expectoration is troublesome. The vapor is to be directed under a tent by means of a tube and funnel. In some instances

the addition of compound tincture of benzoin seems to be soothing. Turpentine will aid a slow resolution.

The diet is to be the best that can be provided, not so much in quantity as in quality. An infant at the breast should have the natural supply, supplemented as need be by a few drops of beef-juice, peptonoids, and egg water. Older children should be fed peptonized or diluted milk, cream with water, soups, meat jellies, custards, beef-juice, scraped beef, and such other foods as can be given in small quantities without distending the stomach and intestines or adding to a catarrh of the enteric tract. Water is always allowable and patients should have plenty of it. As bronchopneumonia is a protracted disease the management of the diet deserves more thought than the average physician bestows upon it. Forced feeding is to be tried when other means fail.

Children who are flatulent and whose movements are fetid and contain mucus are relieved by intestinal irrigation with a normal salt solution. The effect of the solution is beneficial in cases in which the pulse is poor and the vitality low.

Baths and wet packs are to be used to reduce temperature, and a bath at 95° F. gradually reduced to 85° F. with friction will do more good than any other antipyretic. The pack at 65° to 70° F. is often the best means to reduce temperature and lessen the nervous symptoms of a pneumonia. The effect on the peripheral circulation is better than a bath at a higher temperature.

The medicinal treatment of broncho-pneumonia is not always satisfactory, but there are drugs that are valuable and their use must not be omitted. In the early stage, when there is a general bronchial catarrh, a few doses of castor oil given in an emulsion with a small quantity of ipecac will clear the air-passages of mucus and move the bowels. Calomel is a drug that has a decided effect in many cases when the digestion is interfered with and the liver is engorged.

Codein in $\frac{1}{16}$ to $\frac{1}{4}$ grain doses will lessen restlessness and troublesome cough early in the disease, but at times the camphorated tincture of opium will be the best preparation of opium to give. Nitroglycerine has an important place in the treatment of pneumonia, and is indicated when the heart's action is weak, with pale skin and poorly filled arteries. Without doubt it lessens the pressure in the right heart. It is to be given in doses

of $\frac{1}{600}$ to $\frac{1}{100}$ of a grain. Strychnine, preferably the nitrate, is a valuable agent and its use for a weak heart struggling against the pulmonary engorgement is satisfactory and life-saving, but its action on the nerve-centres is to be remembered or else a child will have symptoms not due to the disease. Strychnine should be given in solution in doses of $\frac{1}{600}$ to $\frac{1}{60}$ of a grain, and it should be administered hypodermically if the emergency demand it. Digitalis, strophanthus, and caffein have their places as heart stimulants, but are not so valuable as strychnine and nitroglycerine.

Digitalis steadies the heart, but it contracts the arterioles and its value depends more upon its effect on the systemic than on the pulmonic circulation. Whiskey and brandy are needed in most cases of broncho-pneumonia, not always early in the disease, but when the inflammation is lessened and vitality is low or when there is atelectasis. They are not to be given as a routine treatment in all cases, but most children will do better if alcohol is administered at some time during a lobular pneumonia.

The aromatic spirits of ammonia in doses of 10 or 15 drops added to water will help expectoration and prove a suitable stimulant when alcohol in other forms is not used. Creosote is a valuable drug in the pneumonia of children whose history is tubercular or when there is free purulent secretion. Late in the pneumonia it is beneficial when combined with cod-liver oil. Creosote in ½ to 1 minim doses or given as the carbonate in 2 to 8 drop doses is a good cough mixture if used with a thick malt extract. Cod-liver oil has an important, dual position in the treatment of pneumonia in children. It is often the fat food that is required and the disease is lessened in severity by its use. I do not hesitate to adminster it in every case in which the digestion is not impaired or the temperature high. Cod-liver oil will lessen the severe cough of a long-continued pneumonia and it is of service when given with creosote and whiskey. Quinine is helpful in protracted cases with an irregular temperature and in those with pertussis. The iodide of iron and the hypophosphites are not to be forgotten in the exhaustion and weakness of a protracted convalescence.

Antipyretics of the coal-tar class, cough mixtures with emetics and nauseating drugs are best omitted. Special indications for drugs are to be met as they arise, but the most satisfactory results in the treatment of pneumonia complicating

measles will come from the careful nursing and feeding of the patient and the administration of remedies that will add strength and resistance to stop the advance of the invading micro-organism.

Rogers, Bertram M. H.: Isolation after Diphtheria. (*Bristol Medical and Surgical Journal. Medico-Chirurgical Journal.* Vol. xvi., No. 60.)

The author reports several cases of long continuance of active bacilli in the throat. In one instance this period was 68 days and in another 32 days. The author concludes that the lesson that is to be learned from these cases seems to be that no case should be allowed to mix with healthy persons until bacteriological examination has shown that the throat and nares are free from the bacillus, instead of mere isolation till the membrane appears to have gone. He believes that if this were more rigidly adhered to we should check the spread of diphtheria, which now appears in a most inexplicable way.

Freyberger, Ludwig: The Treatment of Incontinence of Urine in Children with Rhus Aromatica. (*Treatment.* 1898. No. 5. *American Journal of the Medical Sciences.* 1898. Vol. cxvi., No. 4.)

The author makes use of a fluid extract of the fragrant sumach of America. This was first used in the treatment of incontinence of urine caused by an atonic state of the bladder. Burvenich believed that it was a powerful tonic for the bladder, acting similarly to nux vomica. According to Numa, it stimulates the unstriped muscle of the bladder as well as that of the uterus and rectum. During the past three years one hundred and ten instances of enuresis have been under observation. Leaving out those in which the symptom was due to phimosis, preputial adhesions, hypospadia, urinary hyperacidity, cystitis, nephritis, or glycosuria, there remained altogether sixty instances of the use of this drug. Of these, thirty are tabulated, because a sufficiently long time has elapsed since their discharge (nine months to two years) to enable an opinion to be given as to a permanent cure. Patients who had previously received belladonna, strychnine, or tonics without success were at once put upon this treatment. Others underwent a preparatory treatment, which consisted of regulation of the diet, sleeping

upon a hard mattress, the use of light coverings, and cold sponging along the spine. The children were taken up once or twice during the night and made to pass water. The formula is: Fluid extract of rhus aromatica, 1; aromatic syrup, 2; distilled water, 6, which conceals the astringent taste and disagreeable odor. The dose varies from five to ten minims (two to five years); ten to fifteen minims (five to ten years), with a maximum of twenty minims for older children. Of the thirty instances recorded, twelve boys and eighteen girls, cure followed in eighteen, eleven boys and seven girls; improvement in ten, one boy and nine girls; and no improvement in two girls. "Cure" is intended to mean that at least nine months have elapsed since enuresis has occurred for the last time. The average duration of treatment was thirty-four days in boys and forty-five in girls. Thirty-three days, on an average, were sufficient to produce a permanent cure, fifty-three to effect a permanent improvement. It would be rash to claim this remedy as a specific, but it certainly appears to be as efficacious as belladonna, may be given for a long time without the slightest ill effect, and good results may be obtained when the latter proves ineffective.

Zahorsky, John: Tetanus in a Child Treated with Antitoxin. Recovery. (*St. Louis Medical Gazette.* 1898. No. 6. *Medico-Surgical Bulletin,* Vol. xii., No. 18.)

The author reports the case of a well-developed boy, 27 months old, first seen February 15, 1897. He had been sick for two days. The lips were pouting and marked retraction of the angles of the mouth showed the risus sardonicus of lock-jaw. The lips were constantly separated and showed the teeth firmly pressed together. The masseters were hard to the touch. A few lymphatic glands were discovered beneath the angle of the lower jaw. The posterior cervical muscles were rigid—also the extensors of the forearm. The child was very timid and cried continuously, but with the mouth closed. As to traumatisms: the child had fallen from a chair a few days previously, but without dermal lesions resulting. There were two scratches, one on the palmar surface of the forearm, one on the outer side of the leg; a cat, the parents said, had scratched the patient in these places. There was a tightly adherent prepuce. Temperature 99.4° F.; pulse much accelerated. Parents said a dog had

died in convulsions in their yard a few days before. Subsequent microscopical examination of cultures from the dirt around this dog's kennel revealed enormous numbers of tetanus bacilli. There was no family history of tuberculosis, syphilis, or insanity. Patient had never before had convulsions or spasms. Two days later child was worse; that night the cat which had scratched patient died. On the following morning patient had a severe tonic spasm of the voluntary muscles. The arms were extended and firmly pressed against the sides; the lower limbs were rigid and extended; marked opisthotonos; teeth firmly pressed together; respiratory muscles fixed. Face was first red, then livid, then cyanotic; pulse became imperceptible. Child finally lay limp and apparently dead; artificial respiration was resorted to—with success; 1,000,000 units of tetanus antitoxin (Mulford) were injected; adherent prepuce was separated. A second, but a milder, seizure followed. In twelve days the child was well. A severe urticarial eruption occurred ten days after the injection of antitoxin. Chloral and the bromides had been given from time to time.

SURGERY.

Hamill, Samuel McC.: Sarcoma of the Kidney in a Child of Five Years. (*University Medical Magazine*. 1898. Vol. x., No. 10.)

The tumor grew to be of immense size, but operation was refused by the parents. The most interesting feature of the case, and the most misleading from a diagnostic standpoint, was the relation of the descending colon to the kidney. When the intestine passes over tumors of the kidney of large size, it is usually so flattened out on the surface of the kidney that it gives rise to no tympany during life. In the present instance, however, the descending colon selected for its place of crossing the hilus of the kidney opposite to which there existed a very decided groove or depression. This not only prevented its being flattened out, but even admitted of a considerable degree of dilatation, which gave rise to a distinct area of tympany and led to an error in diagnosis. It is interesting to consider the possible influence of this groove upon the diagnosis had the colon been placed elsewhere.

Nicoll, Jas. H.: The Radical Cure of Spina Bifida. (*British Medical Journal*. 1898. No. 1972.)

The author's experience was based on over thirty cases. He has not refused to operate in some degree upon every case, his mortality rate being seven out of thirty-two cases. These patients died within one month after operation. In all these cases, the author made use of (*a*) flaps of as much of the skin as was necessary, and (*b*) flaps of mesoblastic tissue—muscle, fascia, and, in a few instances, bone, this last obtained by including in the mesoblastic flaps the extremities of the abortive vertebral laminæ. He in no case felt the necessity of attempting transplantation of bone or other tissue from remote parts of the patient or from animals.

He draws attention to the fact that the gap in the spinal canal, closed by fibrous tissue and muscle only, in most cases becomes very solid and tough indeed.

In dealing with the sac he has adopted the following methods:

1. In cases in which, after freeing the sac and its neck, he has opened it and found its interior free from nerve cords, he has simply cut it away, closed its neck, and then sutured the mesoblastic flaps, and subsequently the skin flaps, over the stump.

The wound is dressed with some aseptic or antiseptic material secured by strapping, collodion, or bandage.

For a week the child is nursed night and day prone over the nurse's knee, and the back is kept bare of all clothing in order that any accidental soiling of the dressing by urine or fæces may be at once detected and rectified. Indeed, it may fairly be said that in cases of spina bifida situated in the lower lumbar region, the success of the operation is as much in the nurse's as in the surgeon's hands. The operation itself in cases of pure meningocele is of the simplest, and, when the tumor was placed in the dorsal or cervical region, he has often operated on cases in the out-patient department, and had them taken home and nursed by the mothers with complete success.

Several points seem worthy of mention:

Formerly the author took precautions by various means to prevent escape of the fluid while the sac was being removed and its neck closed. Latterly he has given this up, opening the sac and proceeding with excision and suture without any effort to

prevent escape of the fluid. Further, in cases of hydrocephalus complicating spina bifida, he purposely elevates the child's head to permit of escape of a certain amount of fluid before closing the neck of the sac.

In a few cases of small sac a ligature is sufficient. In larger sacs the author employs rows of catgut sutures. It is a somewhat curious fact that the only two instances of relapse were in cases where ligature was employed.

In most cases the author has left the flaps long. The redundant margins of the mesoblastic flaps he has, by means of several rows of catgut sutures, "piled up" into a median ridge curled inwards on the stump of the neck, much as the cut margins of intestine are piled up against each other, and curled inwards by the Lembert suture in circular enterectomy.

The redundant margins of the skin flaps he has similarly piled up into a ridge, but curled outwards. The advantages of this are two: On the one hand it leaves a bulky mass of tissue to close the gap in the spinal canal. On the other, in place of there being opposed edges, there are flat opposed surfaces, rendering the escape of fluid and the entrance of sepsis more difficult. In time the ridge on the skin becomes more or less completely obliterated.

2. Cases in which the sac on being freed and opened is found to contain nerve cords. In his earlier cases the author followed the practice of dissecting the cords off the interior of the sac. This is not free from risk, and in one case, produced damage in detaching the nerves which caused paralysis of one leg, which has remained permanent.

It will be seen, therefore, that the operation adopted by the author is a combination of the principles of Professor Mayo Robson's operation for spina bifida and Professor Macewen's operation for aneurysm.

It differs from Professor Robson's in that no attempt is made to reduce the bulk of the tumor by the operation, that end being attained by the fibrous contraction and consolidation which follow; and, further, in that the operative procedures are not confined to the portions of the sac between the nerve elements; and, finally, that in certain cases the procedure has no similarity whatever with Professor Robson's operation.

As to the production of paraplegia, the author believes that the method he has adopted is very unlikely to be followed by

that condition. He is very doubtful also whether it can have any effect in producing hydrocephalus.

There remain certain further measures, the value of which the author is testing as suitable cases occur, but concerning which he is not at present in a position to express a positive opinion. These measures are: (*a*) The establishing of a drainage channel from the spinal canal (at the site of, and during the operation for, spina bifida) into either the peritoneal cavity or the cellular subcutaneous tissue, or both; (*b*) drainage of the cerebral ventricles, either externally or into the meninges; (*c*) application of various solutions to the interior of the cerebral ventricles.

Moran, G. W.: Acute Cervical Adenitis in Childhood. (*The Physician and Surgeon.* 1898. Vol. xx., No. 8.)

This is an acute local disease resulting almost invariably from secondary infection. The most frequent causes are traceable to catarrh of the nose and throat, adenoids, decayed teeth, unhealthy tonsils, stomatitis, and middle-ear disease.

The glands most commonly involved are those belonging to the submaxillary, upper deep cervical, parotid, superficial cervical, sublingual, retropharyngeal, and postcervical sets. Usually one, and rarely more than two glands undergo acute inflammation at the same time. The gland rapidly enlarges, and is attended with more or less pain, depending upon its location, and the amount of periglandular cellulitis.

The prognosis is always favorable, unless in some severe cases of acute adenitis of the retropharyngeal glands ending in suppuration.

The treatment of acute cervical adenitis divides itself into: (1) Prophylactic—Care should be taken to keep a clean membrane in all catarrhal diseases of the nose and throat. Unhealthy conditions of the vault should be corrected, unusually large tonsils should be removed, and *last*, but far from *least*, the teeth should be attended to. In some seventy-eight cases of acute adenitis, about sixty per cent. were directly traceable to bad teeth and suppurating gums, and twenty per cent. to enlarged tonsils and disease of the nose and throat; hence, the necessity for removal, or attempt at proper disinfection of decayed teeth and inflamed gums. (2) Medicinal—When the acute inflammatory stage develops, hot applications should be made for the

relief of pain. Cold is also recommended, but it is rare to find a child who will tolerate its constant application. To prevent the formation of pus, very little can be done. The early local application of the liniment or ointment of belladonna combined with opium also proves gracious in the relief of pain, and undoubtedly does, in many cases, check the process from going on to suppuration. When pus is present, some authorities advocate waiting until pointing takes place, which, it seems to me, is applicable only in very superficial glands, and is even then, bad practice. As a rule, pus is present in greater or lesser quantity for some time before it is possible to detect it, particularly when cellulitis extends for some distance around the inflamed node; and to wait after you are sure of its presence, thus allowing it time to burrow, is dangerous. After evacuation of pus, curretting may be necessary if healing does not progress rapidly. When suppuration does not take place, but the gland remains large and tender, the local application of potassium iodide ointment has acted better for me than other ointments, or the iodide internally.

Clubbe, Charles P. B.: Fifteen Cases of Intussusception. (*British Medical Journal.* 1898. No. 1923.)

Of these cases 8 recovered and 7 died. In 3 cases the intussusception was reduced by injection of oil without operation. In this series, then, there were 12 laparotomies, with 5 recoveries. In one of the cases that recovered, four inches of the small intestine was resected, and this in a child under twelve months. The author has previously reported 7 laparotomies with 4 recoveries. Taking the operations in the two series of cases together, then, the figures are 19 cases, 9 recoveries, 10 deaths.

These cases show, the author believes, that we must not give up rectal injections. In a certain number of cases the intussusception can be reduced by this means even when used a considerable time after the onset of the attack. In Case I. the child had been ill 30 hours, Case IV. 48 hours, and Case IX. only 7 hours. Mr. Owen, in the current *Yearbook of Treatment*, remarks "that we shall probably obtain better results if we altogether discard the treatment by rectal injections." In Case XIV. the author opened the abdomen after using an oil injection because he fancied he could still feel a small hard mass. As it turned out he should have done well to have waited, for he found that the

intussusception had been completely reduced; and the child unfortunately died in 48 hours of sapræmia as the result of the abdominal section.

The injections, if they are to be of any use, must be given intelligently. An anæsthetic must be given, the buttocks must be raised, and warm olive oil injected by means of an ordinary enema syringe. If the anus is held around the nozzle of the syringe, very considerable pressure can be exercised on the column of oil. Common sense must tell us how much pressure to put on and when to desist. The amount of pressure could be accurately measured by allowing the oil to run in of its own weight from a special apparatus, but this is not always at hand. After apparently reducing the intussusception by injection, be careful not to lose sight of the child for a few days even though the symptoms disappear, and it passes a natural motion. The intussusception is very liable to recur. The author thinks injections of warm oil should be given in all cases after the child is under the anæsthetic, even in cases of long standing when we know that it is impossible to complete the reduction by this means. His reasons are these: It always reduces the intussusception to a certain extent, and in the best and gentlest possible way; and in this way lessens the shock of the coming operation, because it lessens the manipulation of the intestines. It is especially useful in those cases in which we find the intussusception in the rectum; because if we do not use it we may find some difficulty in getting our fingers below the tumor to begin the squeezing process.

After opening the abdomen in cases of long standing, where we find that the intussusception stops moving to gentle pressure, it would probably be better to resect at once. One can nearly always reduce these intussusceptions if he takes time and uses considerable pressure; but after this prolonged manipulation, which must add enormously to the shock, we probably find when the reduction is completed that the bowel is torn so much that we have no alternative but resection, which we now have to do under the worst possible conditions. He feels sure that in these bad cases we shall get better results by resecting directly we find that force must be used. He is strongly in favor of draining in all these cases by means of a small gauze drain surrounded by a piece of gutta-percha tissue placed just within the abdominal cavity; this can generally be removed in twenty-four hours.

Thorndike, Aug.: Rupture of Spina Bifida Sac; Four Cases, Three During Childbirth. (*Boston Medical and Surgical Journal.* 1898. Vol. cxxxviii. No. 8. *Medico-Surgical Bulletin.* 1898. Vol. xiii. No. 17.)

Reflecting that spina bifida is the commonest form of congenital anomaly of the spine, occurring more than once in every thousand births; that the sac is frequently devoid of a covering of skin over the larger portion of its service, and that this exposed membrane is extremely thin and delicate, the author studies this little group of cases of rupture from a therapeutic standpoint. The patient in Case 1 died two days and one-half after birth, before operation could be attempted, presumably from direct septic infection of the spinal meninges.

The patient in Case 2 was operated upon twenty-four hours after birth, the sac being incised, a small quantity of reddish fluid evacuated, the healthy skin incised around the base of the tumor and the dissection carried down to the sac-wall, which was cut off and the edges tightly stitched together with catgut, the wound in the skin being closed by a second row of catgut-sutures. Child died 31 hours subsequently, presumably of septic meningitis also.

In Case 3 the patient was operated upon five hours after birth, the result being successful. A simple meningocele, pedunculated and collapsed; its base was surrounded by an elliptical incision, the sac-wall tied with a silk ligature, cut off, and the skin-wound closed with four silk ligatures. The wound united by first intention, there was no shock, and the baby nursed well.

In Case 4 the baby was eleven days old; the tumor was the size of half a large orange, sessile, and offered no hope of success by operation. The author favors early operation in order to secure the meningeal cavity from infection and leakage.

The choice of the method of operating necessarily depends upon the size and shape of the tumor as well as upon the variety of spina bifida to be dealt with. In meningoceles the operation of excision can be performed with comparative safety, especially if the opening into the spinal canal be small enough to close by a ligature and the skin be sutured over it. In meningo-myeloceles the sac should be opened and the nerves separated from it and replaced before closing off the spinal canal; the neck of the sac should either be sutured or ligatured and the skin closed

over the stump. Should it be impossible to separate from the sac-wall the nerves and cord, the collapsed sac should be tightly sutured and covered with skin by a quick plastic operation. It is suggested that if rupture attends, a sterile dressing could be applied at once in such a way as to stop the leak of cerebro-spinal fluid, the wound being thus kept surgically clean, favoring more frequent recoveries. Upon the accoucheur, therefore, frequently rests the chief responsibility, action being demanded promptly. From an obstetrical standpoint, it is interesting to note that of the three cases which ruptured during birth, two were born before medical aid could reach them, the unusually strong pains of a rapid second stage probably causing the sac to burst.

Gilchrist, T. Casper: Ringworm of the Scalp. (*Gaillard's Medical Journal.* 1898. Vol. lxix., No. 5.)

This disease is due to the presence of a parasite known as tinea tonsurans. This disease is limited to children and is practically never met with in adults. The usual typical appearances, such as a distinct circular patch, covered with light scales and stumpy hairs, which are easily pulled out or almost fall out by themselves, are always easily recognized. The variety which is difficult to diagnose and yet is comparatively common is characterized by a scaly condition of the scalp in patches, though no circular areas are met with. On careful examination of these areas a few stumpy hairs, or hairs which are broken off near the scalp, can usually be found, and the diagnosis is easily confirmed by soaking one or more of them in liquor potassæ and examining with a high power of the microscope, when numbers of spores will be found invading and clinging to the hair-shaft.

Norton, Rupert: The Thymus Gland and its Relation to Sudden Death in Children. (*The Philadelphia Medical Journal.* 1898. Vol. i., No. 6.)

The author presents an extended paper in which he reviews all that is known upon the subject of the thymus gland. As to the function of the gland he believes that we have no true or adequate conception as yet. Nor do the few experiments which have been made on animals, with regard to this gland, enlighten us materially. Tarrelli extirpated the gland from dogs with the following results. These are given only briefly in his report.

1. No dog died of the operation.

2. Dogs showed a great voracity, but grew less than dogs in normal condition.

3. The blood showed a diminution of red-cells and hemoglobin, but an increase of leukocytes, which kept on increasing from one to one and a half months after operation; it showed also the presence of eosinophiles.

4. Dogs showed loss of strength four months after the operation.

5. Dogs' hair grew less well than in unoperated dogs; it lost its brilliancy, became very rough, and fell out easily.

The author draws no conclusions as to the action of the gland from these cases. Abelous and Billard, working together on frogs, give the following summary of their experiments:

1. The thymus in the frog is an indispensable organ for life.

2. Its total ablation is followed by severe troubles: (*a*) dynamic: weakness, paresis, paralysis; (*b*) trophic: discoloration of skin, cutaneous ulcerations; (*c*) alterations in the blood: hydremia, edema, hemorrhages, changes in the corpuscles.

3. Ablation of one thymus does not induce death.

4. We believe that frogs deprived of the thymus die of a true autointoxication, as is shown by the manifest toxicity of their secretions, when injected into frogs lately operated upon.

5. Subcutaneous insertion of the thymus does not prolong life materially, though it may restore the normal color of the skin.

6. Injection of a thymus extract from cattle into frogs causes an augmentation of the excito-reflex power of the spinal cord; at the same time the color of the skin becomes markedly darker, and if discoloration has commenced, the frog takes on its normal color. The effect of these injections seems then to present a true antagonism to the troubles which follow the extirpation of the thymus.

It is Svehla, however, who has, up to the present time, done the best experimental work with the thymus gland. He worked with a watery extract of human glands, as well as of glands from other animals. He states that intravenous injection of the thymal extract from man, cattle, dog and pig, causes in dogs:

1. A lowering of the blood-pressure, following weakness or paralysis of the vaso-constrictors.

2. An acceleration of the pulse due to a direct influence on the heart.

3. In large doses it causes death of the animal, with appear-

ance of restlessness, followed by collapse and dyspnœa. Autopsies showed death in these cases to be due to suffocation.

4. It is probable that "asthma thymicum," and "thymic death" (mors thymica) are the result of a hyperthymization of the blood.

All these observations by these experimenters mentioned are of much interest, but they do not aid us very much in the solution of the question with which we started out, as to whether death may be caused by sudden engorgement of the thymus.

In consideration of the fact that we seem to be left in the dark by both physiologists and experimenters, we are obliged to fall back on clinical evidence, more or less, for solution of this question.

There is much divergence of opinion among the leading men in pediatrics as to the part played by enlargement of the thymus in causing laryngismus stridulus, thymic asthma, and sudden death.

In conclusion, he merely expresses the opinion that as yet the question of sudden death in infants, said to be caused by engorgement of the thymus, is open to discussion, and that it cannot be settled by clinical evidence alone, but must be solved by further study of the gland in its physiologic relation to the development and welfare of the infant.

Gallant, A. E.: Fracture of the Clavicle in Children. (*Journal of the American Medical Association*. 1898. Vol. xxxi., No. 18.)

This is a study of 200 cases of fracture of the clavicle treated by Sayre's method. Fracture of this bone it is well known is the most frequent fracture occurring in children. It presents great difficulties in securing union without deformity.

In a surgical service including 18,042 children of ten years and under, there occurred 343 fractures, of which 172, or 50 per cent., were fractures of the clavicle. Of this number 12 were under twelve months; 112, one to five years, and 48, six to ten years old. The youngest was but six weeks old. Three cases between one and five years came to us with faulty union. The fracture was located at the outer portion of the middle third, and in most cases there was distinct separation, and knuckling upward of the fragments. All were single, simple fractures, with little evidence of laceration of adjacent tissues. The line

of fracture was more or less oblique, with upward and inward displacement of the acromial fragment. Falling on the outstretched hand was given as the cause of the injury.

Up to the time when Lewis A. Sayre described "A Simple Dressing for Fracture of the Clavicle" (Bellevue and Charity Hospital Reports, 1890), no satisfactory plan which would meet the anatomic conditions had been proposed. Since then it has almost superseded all others.

DEFORMITY.—In reference to the deformity, Sayre says that "all authors agree that the deformity which occurs in the fracture of clavicle is, that the shoulder falls downward, forward and inward, and that the outer end of the sternal or inner fragment always rides over the inner end of the outer or acromial portion of the clavicle." Such a displacement of the fragments has not been met with in the series of cases here reported. The point of fracture has been at the outer portion of the middle third, with the shoulder dropping downward, inward and forward, thus dragging on the acromial fragment so as to make an angle or knuckle at the seat of fracture, but the inner fragment has not been found displaced above the outer fragment as described by Sayre and Gray.

To the irritation, if you use a baby powder and use absorbent cotton in the fold of the arm, which you can tuck in after the arm is put up, the irritation to the outer arm does not amount to much. If, as the doctor says, you wish to use the perforated plaster, you may do so. One point in reference to the plan suggested by Dr. Cotton is that when you put a child up in a bandage you have got to put it up to stay. Last year I showed you how to put up the femur of a child so the child could do anything it pleased. The old way was to strap the child down, but in the way I suggested the child can play or do anything it likes. I have no doubt the plaster itches, but that we cannot avoid. I appreciate the difficulty of this plaster, because I have had to use considerable plaster on my own hands and fingers in dressing infective wounds on myself. But in any other way the child's arm moves more or less and there is great difficulty in the healing of the fracture. I never use chloroform but I use laughing gas for the short operation. Perhaps I am not quite so careful as to causing a little pain in children.

After I had examined the child and found the fracture of the clavicle, I remembered having measured the child and found

the shoulders three inches more in circumference than the head. It was a dry labor and I have no doubt I broke the clavicle when I brought the child into the world. I did not put any dressing upon it, nor shall I attempt to break it.

Bull, W. T., and Coley, W. B.: Observations upon the Operative Treatment of Hernia at the Hospital for Ruptured and Crippled. (*Annals of Surgery*. 1898. No. 11.)

The authors report 1051 cases operated upon during the past decade. Of these 522 were operated upon by Dr. Bull, 531 by Dr. Coley. Of Dr. Bull's cases 96 were children under fourteen years, while of Dr. Coley's 365 were children under fourteen years, and 166 adults, or persons between fourteen and seventy years of age. Of Dr. Bull's cases 170 were operated upon by Bassini's method. Of Dr. Coley's cases 448 were operated upon by Bassini's method. Of these 137 were adults or persons between the ages of fourteen and seventy years, and 311 in children under fourteen years. All of Dr. Coley's cases were operated upon between August, 1891, and September, 1898. One hundred and thirty-four cases were operated upon by Dr. Bull prior to 1890, and a comparison of these earlier results in which the Czerny and Socin methods were employed, with the later cases operated chiefly by Bassini's method, is of great interest, and will suffice to show the great superiority of the latter method.

Of the 134 cases operated upon prior to 1890, only 49 per cent. healed by primary union; 40 per cent. relapsed within two years after operation, and most of these relapses occurred during the first year after operation. It should be noted that of the 134 cases only 16 were in children under fourteen years of age.

In regard to the suture material, silk was used in twelve cases, and in every case traced a sinus developed after a longer or shorter interval after operation, remaining open until one or more sutures were finally discharged or removed. The silk was prepared by boiling in a 5-per-cent. carbolic acid solution just before using it.

The mortality of the early series (three deaths) was considerably higher than that in the later cases. One death was caused by ligature of the omentum too close to its attachment to the bowel; one died of hemorrhage and one of peritonitis.

Of the total number of cases, 1051, 921 were inguinal, 96 femoral, 19 umbilical, and 15 ventral: 100 of the cases were inguinal hernia in females; 461 were children between four and fourteen years of age; 590 over fourteen years.

METHODS OF OPERATION.—Bassini's method was employed in 618 cases with twelve relapses. Of these cases 371 were children under fourteen years of age, with three relapses, or ¾ of 1 per cent.; 247 adults over fourteen years, with nine relapses, or 3-7 per cent. In the 80 cases in which the cord was not transplanted, but in which the other steps of the technique were the same as in Bassini's method, there were four relapses.

WOUND HEALING.—Of 531 cases operated upon by Dr. Coley since 1891, 95.5 per cent. healed by primary union.

Mortality of new series, operated upon since 1890, was five deaths in 917 cases, or 2-5 of 1 per cent. One death was due to hemorrhage from large omental stump in an enormous femoral hernia; one was due to ether pneumonia; one to acute peritonitis; a fourth to pneumonia, pericarditis, and suppuration of wound in a very weakly child suffering from spinal disease; the fifth was in an irreducible cæcal hernia in a child aged twenty months, and death was apparently due to shock. Only three of the deaths followed Bassini's method. Four were in children and three in adults.

FINAL RESULTS.—Of the 917 cases operated upon since 1890, 295 were traced and found free from recurrence for periods varying from two to seven years after operation, 486 cases were well upward of one year after operation.

In addition to their own cases the authors report 8,594 operations performed by American and foreign operators. Of these 78 died, the mortality being 9-10 of 1 per cent.

Regarding the results of operation the authors speak as follows:

There is no longer room for doubt that hernia can for a considerable period at least, be cured by operation. Whether these cures will prove permanent we cannot, as yet state positively. The proportion of permanent cures cannot be estimated with exactness, inasmuch as no definite limit of time can be laid down beyond which relapse may not occur. In spite of this, we are able, from a careful study of the cases operated upon up to the present time, to arrive at certain fairly definite conclusions. The results of our observations, based upon a study of 360 cases of

relapsed hernia following various methods of operation, already referred to, throw valuable light upon the question as to the period when relapse is more likely to occur. We have found that 80 per cent. of these relapses occurred during the first year after operation; 64.5 per cent. during the first six months following operation; while but 11.9 per cent. occurred after a period of two years had elapsed. Of the cases that relapsed after two years, five occurred between ten and twenty-two years after operation; seven cases between five and ten years. These cases which were not selected, but taken as they applied for treatment, ought to give us a fairly accurate idea of the average time when relapse occurs.

Saccharin in Infantile Feeding.—Keller (*Centralbl. f. inn. Med.*) observes that he has not noticed any particular effect upon the gastro-intestinal symptoms themselves when saccharin has been used. Infants took sow's milk to which saccharin had been added without difficulty. Saccharin is preferable to many other forms of sugar, as these latter sometimes produce diarrhœa. When sugar is added to the food of infants suffering from gastro-intestinal affections the excretion of ammonia is increased. This increased ammonia excretion can be lessened by the administration of alkalies, thus showing that it is due to increased formation of acid. If it can be proved that metabolic changes occur under these conditions which are likely to lead to an acid intoxication, it is better to avoid the use of these sugars. In the author's investigations saccharin was found to have no action upon ammonia excretion. He employed tablets which contained one part of saccharin to three parts of bicarbonate of sodium. He appends tables from three cases to show that when saccharin was being used the ammonia excretion was small when compared with that occurring in other children also suffering from gastro-intestinal disease. Finally, Keller gives details of the investigations into metabolism carried out in three cases, in two of which one and a half tablets of saccharin were given and in the remaining one two tablets. There was no evidence that saccharin hindered absorption. The author concludes that when it is merely a question of sweetening the food of infants, saccharin is the most suitable form of sugar.—*British Medical Journal.*

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HEMORRHAGIC DISEASE OF THE NEW-BORN— A REPORT OF TEN CASES.*

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From the seventeenth century to the present day medical literature teems with reports of cases and theories as to the cause of spontaneous hemorrhage of the new-born. The ten cases here reported are of interest, mainly as illustrating the infectious character of the disease, now generally recognized, and also from the bacteriological investigations made in connection with them. The number of births occurring in the Maternity during this period, from February 19 to May 11, 1897, was 54. The proportion of cases in which hemorrhage occurred was a little more than 18 per cent. In no instance was it possible to obtain from the mother a history of syphilis, hemophilia or tuberculosis, and labor was normal in every case.

The ward had been entirely free from sepsis, there was no apparent cause for the first hemorrhage, and the cases followed one another in quick succession, often overlapping, and ceased when proper measures were taken for isolation.

Cases of hemorrhage from the uterus alone, of which there were 9 during the year, have not been included in this group; 2, occurring at the time of the epidemic, were unusually profuse, and in 2 there was marked loss of weight, which was not made up at the time of their discharge.

The cases were as follows:

CASE I.—A male infant, born February 19th, an eight months' child, and rather feeble, was kept in incubator; had a rather

*Read, in part, before the New York Pathological Society, April 13, 1898.

severe hemorrhage from the nose on the sixth day, which ceased spontaneously and did not recur. Temperature did not rise above 99.6°. The weight fell from 4 pounds 10 ounces to 3 pounds 15 ounces. The mother removed child, against advice, on the tenth day.

CASE II.—Male child, born March 4th; weight, 8 pounds 2 ounces. Cord did not separate until the eighth day, but there was no evidence of infection around umbilicus. On the eighth day the child seemed weak, the abdomen was depressed, the whole body had a bluish tint, and slight convulsive movements of the arms and legs were noticed. On the ninth day temperature rose to 100.4°; on the tenth day an ecchymotic spot appeared on the knee; head was thrown backward and eyes rolled. Eleventh day, ecchymoses over both legs; temperature normal. Twelfth day, child weaker, bloody stool. Thirteenth day, ecchymoses more marked, whole right leg blue, respirations shallow; temperature, 102.8°; pulse, 152; weight had gradually fallen to 5 pounds 15 ounces; death on thirteenth day; autopsy was refused.

CASE III.—Male child, born March 6th; weight, 8 pounds 15 ounces. Fourth day temperature rose to 102.2°; child did not nurse well. From fourth to eighth day there was a daily rise of temperature from 100° to 102.6°; on eighth day redness and swelling appeared at the angle of jaw on left side, and several ecchymoses in same region. The swelling gradually extended under the chin to the opposite side, and was tender to the touch and fluctuating; two days later it ruptured spontaneously and several blood clots and some fluid blood escaped; the opening was enlarged and a surgical dressing applied. The child appeared otherwise well, and nursed well until last two days, but weight had fallen to 6 pounds 13 ounces; death on thirteenth day.

AUTOPSY, twenty-four hours after, showed very extensive cutaneous and subcutaneous hemorrhage of the neck. This so undermined the tissues that there was free communication beneath the chin from ear to ear. On the left, an opening of 3 c.m. in the centre of a sloughing area exposed the muscles and external jugular vein. No rupture of vessels found; few hemorrhagic spots over the scalp. Skin of hands and feet was very tough and almost black; umbilicus normal; abdominal and thoracic viscera were congested, but no hemorrhage found ex-

cept in lung; heart showed vegetations along the mitral and tricuspid valves; foramen ovale closed.

CASE IV.—Male child, born March 6th; weight, 5 pounds 14 ounces; child thin, pale. On third day he had slight hemorrhage from nose; on fourth day the cord separated, and three hours after there was a slight hemorrhage from the umbilical stump, which was easily controlled by pressure; temperature was normal; discharged on fourteenth day; weight, 6 pounds 9 ounces.

CASE V.—Male child, born March 20th; weight, 3 pounds 12 ounces; feeble. First day, vomited blood and mucus; eighth day, large, bloody stools; twelfth day, temperature rose to 103.4°; thirteenth day, temperature 102°; child gradually losing in weight; fourteenth day, temperature normal; patient discharged; weight, 3 pounds.

CASE VI.—Female child, born April 15th; weight, 6 pounds 9 ounces; normal in appearance. Third day, cord separated; vomited slight amount of blood; child pale; fourth day, bloody stool and also blood from vagina; child paler; weak; temperature, 102.7°; fifth day, bloody stool; temperature, 103.6°; respirations, 72; neck and legs rigid; eyes roll; convulsive movements of the hands; sixth day, large amount of dark blood from mouth just before death; weight, 5 pounds 6½ ounces.

AUTOPSY twelve hours after death; petechial hemorrhages found on right arm and chest; fluid blood about vulva; cord still adherent, normal; lungs, congested posteriorly; neither consolidation nor hemorrhage found; heart, soft red vegetations along greater part of edge of tricuspid valve; mitral less markedly affected; pulmonary and aortic valves and heart muscle normal; foramen ovale almost closed; liver, fatty; no hemorrhages; kidneys, adrenals and pancreas, negative; spleen very congested, firm; stomach, pale, some altered blood within, but neither hemorrhage into mucosa nor ulceration found; intestine, was filled with dark reddish tarry material; except slight enlargement of the isolated follicles of colon, no change in mucosa could be detected. (The tenacious contents made an absolute diagnosis impossible.) Bladder, about the ureteral openings elevated hemorrhagic areas 2x4, m.m., otherwise negative; uterus filled with fluid blood; adnexa normal; brain, moderate congestion of meninges but no hemorrhage either there, into the ventricles or basic ganglia; brain tissue appears normal.

CASE VII.—Male child, one of twins, born at seven months, April 7th; weight, 3 pounds 13½ ounces; was kept in incubator and fed with modified milk; third day slight hemorrhage from nose; death on the same day.

AUTOPSY.—Lungs partially atelectatic; heart and abdominal viscera negative; no hemorrhages found.

CASE VIII.—Male child born April 9th; weight, 5 pounds 8½ ounces; feeble; breech presentation, but birth normal; on first day presented multiple ecchymoses on abdomen and legs; death on the morning of second day.

AUTOPSY sixteen hours after death; over lower abdomen, buttocks and legs, petechial hemorrhages; chest, no fluid present; lungs, moderately congested; atelectasis of lower lobe of right and the greater portion of left lung; heart, a few small hemorrhagic areas beneath the visceral pericardium; tricuspid valve, along edge, soft red granulations; mitral, same condition to rather less degree; foramen ovale and ductus arteriosus patent; abdominal organs negative.

CASE IX.—Female child born April 17th; weight, 5 pounds 15 ounces; fourth day had two stools streaked with blood and a bloody discharge from vagina; temperature normal; discharged on fourteenth day; had not recovered birth weight.

CASE X.—Female child born April 29th; weight, 8 pounds 5 ounces; cord separated on fifth day; on seventh day temperature rose to 103.6°; on eighth day, large bloody stool; temperature, 102°; on eleventh day, bloody discharge from vagina; no further symptoms; patient was discharged on twelfth day; weight, 6 pounds 11 ounces.

It will be noticed in reviewing these cases that of the ten, seven were male, three female. Two were premature, one at eight months, one a seven months' twin; three were feeble five apparently healthy.

The time of the first hemorrhage was, in the majority of cases, during the first week; in no case later than the tenth day. The mortality was 50 per cent. This is low compared with figures given by other observers. The group, however, includes several cases so slight that they might easily have been overlooked had they occurred under other circumstances. On the other hand, two of the five fatal cases had, as shown by autopsy, atelectasis, probably as important a factor in determining their fate as the presumable infection and hemorrhage.

BACTERIOLOGICAL STUDY OF CASES III. AND VI.

CASE III.—On day before death bouillon tubes and agar plates were inoculated with a small amount of blood from the finger. These remained sterile.

At autopsy, twenty-four hours after death, cultures were made from the liver, kidney, heart and spleen. Bouillon and agar plates were used as before. The first two showed no growth; this in the light of the following case is suggestive. Those from the heart and spleen were contaminated.

CASE VI.—Autopsy twelve hours after death; agar plates were inoculated from the liver, spleen and inferior vena cara, bouillon tubes from the heart's blood and agar tubes from the kidney and uterus. Of these the agar plates remained sterile. The broth after twenty-four hours at 37° C. was cloudy, but no deposit. The agar tube inoculated from the uterine blood showed a continuous delicate whitish growth along the line of puncture, but no surface growth, while that from the kidney had two minute points below the surface.

Cover slip preparations from the different organs showed seemingly several varieties of organisms. There were large and small cocci staining either well or palely, and arranged in groups, pairs or short chains. Many were oval, and forms showing all gradations from a coccus to a bacillus were found. Clear spaces surrounded some, but with the simple stain no capsule was defined, and when stained nearly a year later for the capsule (Welch's method), none could be demonstrated although the organism stained well.

Preparations from the cultures showed also an organism varying much in size, outline and intensity of staining; often arranged in pairs, but also seen in short chains or groups.

Where oval, bipolar staining was common. Examined in hanging drop non-motile.

The organism was further studied as follows:

The media employed included nutrient agar, tubes and plates; gelatine, tubes and plates; bouillon, also bouillon with potass-hydrate or hemoglobin added, glycerine agar, blood agar, blood serum, potato, potato with potass-hydrate, ascitic fluid, milk and glucose broth.

CULTURES.—It was early found that large amounts of material were needed for successful inoculation, so the platinum loop was used in making cultures. Difficulty was experienced in

keeping the organism alive, and growth did not increase after twenty-four to forty-eight hours. The longest periods of viability noted were five and seven days, two to four days being the usual limit, but even when inoculations were made every day or two the organism would often lose its vitality whether kept in ice chest or thermostat.

It was kept alive in pure culture for three months, when, through a three days' neglect in transplanting, it was lost. The media employed was that used in a large laboratory.

In *agar* the growth was not at all constant, but when present, it formed a delicate whitish line along the puncture—exactly to the free surface. Very rarely the slightest possible growth was found on the surface.

AGAR PLATES.—Growth when present, slight, as described, but very rarely present.

When sterile blood from the finger was spread on the surface of such, quite a free growth occurred along these paths, the remainder of the plate remaining sterile.

Plates inoculated after moistening the surface with one-tenth normal KOH solution, remained sterile.

GELATINE.—No growth at room temperature in either ærobic or anærobic cultures. Still none after the addition of 0.7 c.c. of one-tenth normal KOH to 8 c.c. of gelatine.

BOUILLON.—When inoculated directly from an animal and large amounts of material used, a growth occasionally occurred.

In only two instances, out of a large number of tests, did the organism develop when the inoculation was from other tubes.

When, however, 0.25 or 0.125 c.c. of a saturated solution of hemoglobin in 1 per cent. KOH was added to 5 c.c. of broth, growth in ærobic cultures took place. Both ærobic and anærobic cultures were obtained when one-tenth normal KOH solution was added to the broth until the latter was distinctly alkaline. With the growth of the organism the broth became acid.

GLYCERINE AGAR.—Development much more constant and more abundant than in plain agar; no surface growth.

BLOOD SERUM.—Delicate colorless surface growth.

POTATO.—Uncooked, and reaction slightly acid. No growth.

When, however, the surface was moistened with one-tenth normal KOH solution before inoculation, a slight and imperceptible growth resulted.

ASCITIC FLUID proved the most favorable medium, especially in anærobic culture. The clouding was general.

MILK.—Reaction slightly alkaline or amphoteric. After twenty-four hours no coagulation, but the reaction became slightly acid. In thirty-six to forty-eight hours a firm coagulum formed, and the reaction became distinctly acid.

GLUCOSE BROTH, in gas tubes. Reaction, faintly acid or neutral; ærobic and anærobic cultures remained sterile. When 2.5 or 3 c.c. of one-tenth normal KOH solution were added to the broth of the bulb, growth took place there, while the medium in the long arm remained perfectly clear. If, however, the tubes were shaken after the addition of the alkali, the clouding was general throughout the tube.

With the development of the organism the medium became acid. No gas produced.

Morphology of the organism in the different media.

AGAR.—Cocci of varying size found in pairs, in chains of 4 to 8 elements, or grouped. Rarely, a form resembling a short, thick bacillus—with or without the appearance of beginning transverse division.

GLYCERINE AGAR.—The same.

BOUILLON.—The cocci usually in pairs. Marked variations in size and shape. Where the organism approached the bacillus type bipolar staining was common. Where hemoglobin was added to the broth, chains of even 12 to 20 elements, were present.

BLOOD SERUM.—Large to small cocci staining very differently, usually arranged in masses, although short chains and oval forms, the latter either drawn out and distorted or thick and with pointed ends, were found.

In cultures examined at the end of the second, third, fourth, fifth and sixth days the organism was unchanged, and no spore formation was observed.

POTATO.—About the same.

ASCITIC FLUID.—Organisms larger than in the other media; cocci round or oval and thick. Many chains made up of diplococci, and some simple chains. In these the elements were often large at one end while small or deformed at the other. A few of the distorted, elongated forms, with irregular staining.

PATHOGENIC EFFECTS OF THE ORGANISM: ANIMAL INOCULATIONS.

I. April 6th, a mouse was inoculated intraperitoneally with 0.2 c.c. of heart's blood from the original case; result, negative.

II. Guinea pig, 250 gm., inoculated April 8th, intraperitoneally, with 1 c.c. of a forty-eight hour old broth culture from the heart's blood; death in less than forty-eight hours.

AUTOPSY.—Skin congested, and general subcutaneous œdema marked; liver, over the surface patches of purulent exudate; otherwise negative; spleen and kidneys congested only; left adrenal larger than right, and of bright red color; stomach, intestines and heart negative; lungs congested posteriorly only; no hemorrhagic areas found in any of the organs.

Cover slip preparations were made from the liver, exudate over the liver, heart, spleen, kidney and lung. An organism was present in all, corresponding to that found in the original case. Cultures from the liver and heart showed an organism with the culture peculiarities already described.

III. Rabbit, 1127 gm.; April 6th, 2.5 c.c. of the broth culture used for Case II. were introduced into the ear vein. The day following animal seemed sick, but ultimately recovered.

IV. Pig, 245 gm.; inoculated April 17th with 1.5 c.c. of a seven day old ascitic fluid culture from the heart of first pig. As expected from so old a culture, this had no effect.

V. Pig, 200 gm.; May 3d, 1.5 c.c. of a forty-eight hour old ascitic fluid culture (of the series originating from the uterus) were introduced into the peritoneal cavity. Death in twenty-one hours.

AUTOPSY.—Very marked subcutaneous œdema: congestion of thoracic and abdominal vessels; moderate amount of turbid fluid in peritoneal cavity; a layer of purulent exudate covers the surface of the liver and extends across the abdomen to the spleen; liver and kidneys negative; left adrenal congested; spleen, intestine and uterus much congested, but no hemorrhagic areas found; lungs congested posteriorly only; heart negative; cover slip preparations from all the organs showed large numbers of organisms with the characters already described.

Cultures were made from the liver, the exudate over the liver, spleen and heart's blood, with the same varying results: *i.e.*, no growth took place in anærobic broth and agar stab inoculated from the heart's blood, while on the agar plate, where the blood was thickest, a few delicate colonies developed; agar

stick and surface cultures from the liver and abdominal exudate showed a delicate growth along the puncture only; the same from spleen: no growth.

VI. Rabbit, 1110 gm.; May 6th, inoculated in the ear vein with 1.5 c.c. of a twenty-four hour ascitic fluid culture from the abdominal exudate culture of Case V.; death in forty to forty-two hours.

AUTOPSY.—Head strongly retracted; no subcutaneous œdema, but moderate congestion; peritoneum negative; liver bleeds freely on sectioning; kidneys and spleen congested, and on surface of latter, question of hemorrhagic points; adrenals normal; bladder distended, with turbid and bloody urine. Lungs: Areas of congestion anteriorly; posteriorly pale, with pinhead-sized hemorrhagic points; heart negative; smears from the organs showed apparently the same organism; while in agar and glycerine agar inoculated from the heart, kidney and liver, growths, as before, occurred.

MICROSCOPIC.—Organs of pig inoculated May 3d, and rabbit May 6th.

The *liver* in both showed engorgement of the vessels with some degeneration of liver cells. In VI. small hemorrhagic areas. Exudate in Case V. contained enormous numbers of organisms.

SPLEEN.—Marked congestion.

KIDNEY.—Congestion general; hemorrhage here and there, especially in the region of the straight tubules; some cell proliferation of tufts.

PANCREAS.—Considerable blood free in the tissues.

HEART.—(Pig.)—Cross section of the ventricle shows an absence of endothelium for about a fifth of the circumference. In the contained blood which is in intimate relation with this portion of the ventricular wall are a few diplococci and short chains. Slight inflammatory change of heart muscle is present.

LUNG.—(Rabbit.)—Over certain areas the alveoli are filled with blood and epithelium. Over others occupying the field of a No. 7 Leitz objective, the lung structure is almost hidden by the effused blood.

SUMMARY.—A pathogenic, non-motile facultative anærobe.

In *agar* and *glycerine agar* growth up to the surface, very rarely, and then only to the slightest degree, over the surface.

Growth on the surface of agar when blood added; none when KOH.

No development in *gelatine* either in ærobic or anærobic cultures, nor when small amount of KOH added. In *milk*, production of coagulum and acid.

Poor growth, usually none in ærobic or anærobic *broth*. When KOH added, growth in both, the broth becoming acid. When hemoglobin in KOH added, growth free.

None on *potato* until surface moistened with KOH, but slight on animal blood serum.

In *glucose broth* growth only when KOH added; acid then produced, but no gas.

Ascitic fluid, especially anærobic cultures, proved the best medium.

The short life of the organism and the marked tendency to die out even when frequent transplantations made.

Variations in the morphology of the organism as seen in: Cover slip preparation from the organs of the original case and those of animals dying as a result of inoculation; in cultures made throughout the series, and in the hardened sections of organs of animals.

CONCLUSIONS.

The result of the bacteriological examination of these cases only adds to the present confusion in regard to a possible specific micro-organism of hemorrhagic disease of the new-born. To illustrate this, one need only call attention to some of the findings reported, *viz.*:

The streptococcus alone or associated with an organism having all the characters of diplococcus of pneumonia.

Bacillus pyocyaneus alone or associated with the staphylococcus.

Bacillus lactis ærogenes.

An organism with the characters of Friedländer's bacillus.

Bacillus of Gaertner; also one resembling that found by Kolb in purpura hemorrhagica.

Finally, the negative result at times obtained, and our own organism, which, while it suggests the diplococcus of pneumonia and probably belongs to the pneumococcus group, is to be distinguished from this as well as from all other described forms that we have been able to find.

DIPHTHERIA ANTITOXIN BY THE MOUTH.

BY JOHN ZAHORSKY, A.B., M.D.,

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Does diphtheria antitoxin enter the circulation when administered by the mouth? Roux has denied this. Escherich (*Wiener Klin. Wchschr.*, 1897, 799; *Pediatrics*, March 1, 1898) failed to detect it in the blood of infants after a dose had been given by the mouth. In fact, he takes occasion to warn clinicians not to rely on its use in this way as it is ineffective.

In the spring of 1897 (*New York Medical Journal*, March 19, 1898) I reported the results of its use by the mouth in a series of nine cases, all of which recovered. I also reported its use as a prophylactic measure in about forty cases in which there had been more or less exposure to the infection. In not a single instance did diphtheria supervene. While as a curative measure the administration *per os* presented certain defects, as an immunizing method it certainly seemed the more ideal; consequently, I urged that this method should receive the preference when prophylaxis was sought. This article has been widely quoted and, perhaps, has induced other physicians to use antitoxin by the mouth.

Yet Escherich asserts on the grounds of animal experimentation that the antitoxin is not appropriated by the organism, when administered by the digestive tract.

Were my cases really only a fortunate series, which terminated favorably without antitoxin? While admitting that from a scientific standpoint the number of cases is insufficient to prove the curative effect; nevertheless, the promptness of cure after two days, convinced me that the serum is absorbed. More conclusive in the demonstration are the results in the large number of cases immunized. In several families the children were compelled to remain in the same room with the patient, and yet none contracted the disease. Since the publication of this report, I have used this method of immunizing infants in an additional fourteen cases in private practice, and one hundred and fifty infants in the Bethesda Foundling Home. Twice in this institution, after an outbreak of diphtheria among the inmates, the little patients were given antitoxin or antitoxic milk

by the digestive tract, and yet none contracted diphtheria. An apparent exception took place, but it was shown that the baby vomited the antitoxic milk. Clinically, therefore, it seems demonstrated that antitoxin can be absorbed by the digestive tract. But we have biological tests to support this view.

Fisch (*New York Medical Journal*, April 9, 1898) after a large number of experiments on animals, concludes that the antitoxin reappears after twenty-four to thirty-six hours. To quote his own words: "It has, therefore, been established that while after twenty-four or thirty-six hours nearly the whole amount of antitoxin can be recovered from the blood, when the antitoxin has been taken by the mouth, after five, six, nine and eleven hours nothing, or very little of it can be found."

Escherich surmised that the gastric juice probably destroys the antitoxin, but Fisch has shown that artificial gastric juice does not modify its action. Four puppies each received a lethal dose of diphtheria antitoxin; the first received at the same time antitoxic milk by the mouth, the second received the milk twelve hours before the toxin, the third received the milk twelve hours after the toxin, the fourth received no milk. Animals three and four died in thirty-six hours, the second in ninety hours, and the first in sixty hours. The last two died rather of the effects of local necrosis. Experiments with kittens showed a more satisfactory result. Three kittens out of five were saved, and in these the milk and antitoxin were given twelve, twenty-four and thirty-six hours before the toxin. When antitoxin and toxin were given at once the animal died. These experiments were multiplied, concerning which I refer to the original article, and there can be little doubt that after thirty-six hours the antitoxin is demonstrable in the blood, in both the old and young.

These facts, together with the clinical experience mentioned, certainly establish that antitoxin *per os* is absorbed after thirty-six hours, and, therefore, as a prophylactic measure is perfectly effective. I understand that Dr. Fisch is now engaged with another series of experiments on the same subject, the report of which we anxiously await. Why antitoxin does not at once enter the blood, is not known; neither do we know why when injected hypodermically it does not show its action for many hours.

It might be said that a small quantity of toxin enters with the serum and this immunizes; in fact, Hueppe has

asserted that immunization is effected by the toxin rather than antitoxin.

It has been repeatedly demonstrated, however, that the toxin of diphtheria does not enter the circulation, and Nencki proved that the pancreatic juice destroyed it. We can, therefore, not admit the assumption that the small quantity of diphtheria toxin caused the immunization after thirty-six hours. Possibly the antitoxin is retained in the liver or epithelial lining of the intestine. I shall continue to use antitoxin by the mouth as a prophylactic measure notwithstanding the experiments of Escherich.

1635 SOUTH GRAND AVENUE.

Case of Infantile Paralysis in a Child Fifteen Days Old, with Recovery.—This unusual observation is made (*Münch. Med. Woch.*) in the case of a child fifteen days old; the attack began with a paresis of the fingers and toes, and paralysis of the hand, arm and upper arm, and the foot and muscles of the leg. The attack was developed without fever. There were no cerebral symptoms. Complete recovery took place in four weeks.—*Boston Medical and Surgical Journal.*

Facial Asymmetry in Infantile Hemiplegia.—Féré (*Nouvelle Iconographie de la Salpétrière*) records some observations on fifteen cases of infantile hemiplegia. He found that on the affected side in half the cases the forehead was lower in two-thirds of the cases, the vertical measurement of the orbit was less, and in four-fifths of the cases the inferior maxilla was smaller than on the sound side. The ear also was found in these cases to show a flattened helix, and to appear larger than on the sound side, and other projections, besides "Darwin's tubercle," were present on the affected side. It is evident that in such cases the asymmetry of the two sides is simply due to arrest of development in direct connection with the hemiplegia; hence the writer argues that similar defects associated with mental weakness are not necessarily evidence of atavism as has been suggested.—*British Medical Journal.*

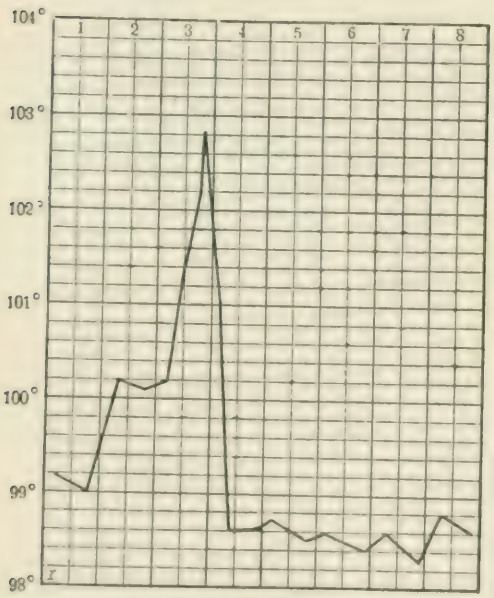
INANITION FEVER.

BY FLOYD M. CRANDALL, M.D.,

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In describing the following cases, I have used the term *inanition fever*, with full knowledge that it may perhaps be a misnomer. It is possible that future observations may show causes other than lack of nourishment to account for the peculiar condition presented by these patients. At present, however, the term best describes what seems to be the chief exciting cause—a lack of proper nourishment during the first few days of life.

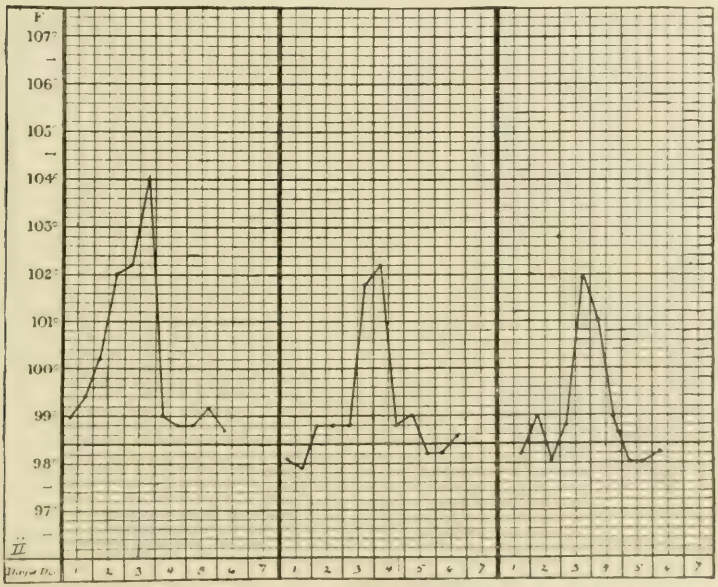
In August, 1895, a paper on this subject by Dr. L. Emmett Holt appeared in this journal. That paper contained the most complete description of the disease which had at that time been published. Dr. Henry E. Tuley also reported three cases in the same number. The subject was then comparatively new, very little having been written upon it. But little, it must be admitted, has been learned since. I report these cases, not so much for the purpose of adding new facts to our knowledge as to bring to your attention an important but neglected subject.



TEMPERATURE RANGE IN ONE OF DR. HOLT'S CASES OF INANITION FEVER (REPRODUCED FROM "THE ARCHIVES OF PEDIATRICS" FOR AUGUST, 1895).

The etiology of this condition is still a debated question, various views being held regarding it. It is, no doubt, a fact that the radical changes in the bodily economy incident to the first days of life predisposed to febrile conditions, which would not occur after the functions of life had been fully established. It is quite possible that some urinary condition is, also, an ex-

citing factor. The secretion of urine is usually scanty and a copious discharge of urates is frequently seen during the height of the fever. In later life, however, a profuse discharge of urates is by no means an indication of a febrile condition. While the term inanition fever is not wholly satisfactory, it seems to me that it is the best yet proposed. It has, at least, the merit of impressing upon the mind the fact that it is accompanied, if not caused, by insufficient nourishment, and will be cured by supplying that nourishment. So far as I know, no case has been reported in which the infant was receiving an



TEMPERATURE RANGE IN DR. TULEY'S THREE CASES OF INANITION FEVER (REPRODUCED FROM "THE ARCHIVES OF PEDIATRICS" FOR AUGUST, 1895).

abundant amount of nourishment, while all recorded cases have rapidly improved upon receiving a free supply. Acute starvation in an individual at the very threshold of independent existence, seems to be the most rational explanation of the phenomena of the disease.

The occurrence of inanition fever was first brought to the attention of the profession by Dr. J. W. McLane of New York, in 1890. Since that time extensive observations have been made upon the disease. In the Sloane Maternity Hospital, of

New York, among 500 children born consecutively, 135 suffered from fever during the first five days of life, the fever not being due to septic or organic causes. In the Nursery and Child's Hospital, 20 children among 200 presented the same symptoms.

The reason that inanition fever so long escaped observation and is even now considered rare by most practitioners, is probably due to the infrequency with which the temperature of newly-born infants is taken. In other words, the disease is overlooked.

The symptoms are quite characteristic and develop alike in robust and in weakly infants. On the second or third day the child, who has perhaps been quiet and restful, becomes irritable and restless. It worries and cries and sucks its fingers or anything it gets into the mouth. The mouth may be dry and the surface of the body flushed, but in my experience the child does not always give distinctive evidence of the amount of fever present. Unless the thermometer is used, the fever may easily be overlooked. I have not seen extreme prostration, even with high temperatures, but in none of my cases has the elevation of temperature been long continued. The fever is usually at its height on the third or fourth day of life. It rises somewhat gradually during twenty-four or thirty-six hours and is then liable to rise suddenly to its maximum point. The fall of temperature is sometimes very rapid if food is given freely. In some cases, however, the fall is somewhat gradual, a day or two being required to reach the normal.

Loss of weight during the first week of life is the rule with all children, but infants suffering from this fever lose weight much more rapidly and decidedly than do others. Excessive loss of weight is a serious handicap to an infant. This is one reason among many, therefore, why inanition fever should be recognized and treated.

Diagnosis should be made partially by exclusion. It would be very unsafe to take for granted that every fever occurring during the first four days is due to inanition. Thorough inspection of every portion of the child's body should be made, as well as a physical examination to exclude erysipelas, septic infection, and disease of the various internal organs. Septic infection rarely produces symptoms before the fifth day, while organic diseases with fever are exceedingly rare.

Methods of treatment while simple are usually very effective. The breasts should be examined at once to determine

whether the milk supply is sufficient. Statements of the mother and nurse upon this point are apt to be deceptive and the question can sometimes be settled only by considerable investigation. The infant sometimes seems to be getting an adequate supply of milk when, as a matter of fact, the supply is very scant. If the milk is found to be insufficient in quantity, artificial food should be at once prescribed. If there is doubt regarding the amount of food the child is receiving, it may first be put to the breast for about fifteen minutes and then allowed to take what artificial food it seems to require. Valuable time should not be wasted, however, in vain attempts to support a child upon an inadequate supply of breast milk. The physician should make it a point to determine personally on the third day whether the breast milk is adequate for the support of the infant.

Every newly born infant should receive water every two hours, two ounces at a time being allowed, if the child seems to require it. When the milk supply is established, the habit of giving water to the baby several times a day should still he continued. Inanition fever requires no drugs nor antipyretics. A proper supply of nourishment, or even of water, is all that is required.

The two following cases are of interest, the first because it is typical of inanition fever as it most commonly appears, the second because the temperature reached an unusually high point in a very vigorous and robust infant:

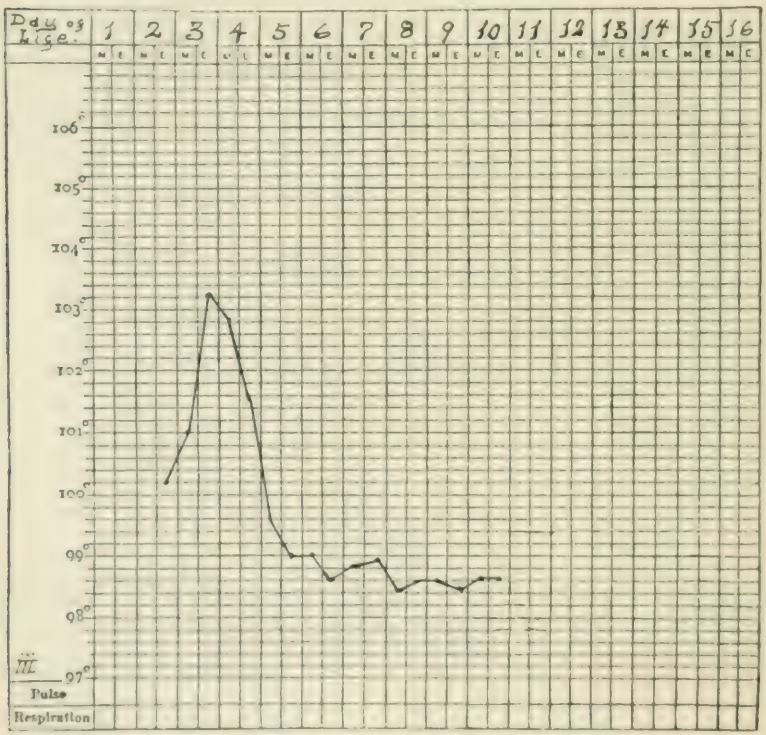
CASE I.—Baby L., born December 17, 1895; weight at birth, eight pounds and two ounces; a well-developed child; normal in every respect. Nothing unusual was noticed until the afternoon of the second day when he became restless and cried at short intervals but did not seem otherwise ill.

On the following morning he was no better. He would sleep for twenty minutes or half an hour, and then wake and fret or cry for a short time, and then drop into another short and restless sleep. He seemed to be feverish, and the temperature was found to be 101°. He was somewhat flushed, and during the day was restless and very troublesome; he slept only for short intervals, and sucked his thumb vigorously when awake. The breasts did not fill, and the child received no nourishment except a little sweetened water.

On the fourth day it was evident that the mother would not

be able to nurse the child. A milk mixture was therefore prescribed, and the child began to be fed at regular intervals.

He took the milk eagerly, and was not satisfied with the quantity prescribed. He was, therefore, permitted to take as much water as he wished after each feeding. The restlessness and crying which had continued through the night gradually disappeared during the day, and he slept well through the following night.

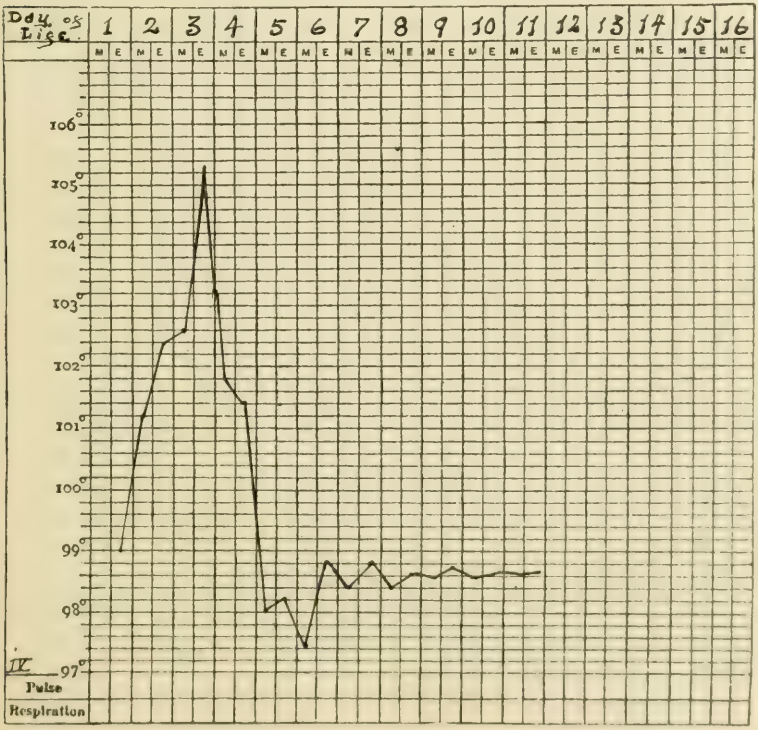


TEMPERATURE RANGE IN A TYPICAL CASE OF INANITION FEVER. (THE AUTHOR'S FIRST CASE.)

On the following day the condition of the child was almost normal. He slept for considerable intervals, and soon refused to take any water after the feedings. The temperature remained normal, and no further symptoms were observed. The temperature range is shown by the accompanying chart.

CASE II.—The second patient, Baby R., was a strong, healthy child born of perfectly healthy parents, weighing at birth ten

pounds. He was born at eight o'clock in the morning on January 27, 1899. On the first day he was quiet, sleeping for periods of two or three hours. On the first night he was perfectly quiet and slept for long intervals without waking. On the evening of the second day he became restless and fretful, and during the night was wakeful and had frequent crying attacks. He had been put to the breast, but seemed to obtain but little. Water had been given in but small quantities.



UNUSUALLY HIGH TEMPERATURE RANGE IN A CASE OF INANITION FEVER. (THE AUTHOR'S SECOND CASE.)

On the third day every evidence was presented that the milk supply was being established. The child was ordered to be nursed every two hours. No other orders for food were given under the belief that the breasts would furnish an ample supply, notwithstanding the fact that the temperature was reported to be 102.4°. Thorough examination revealed no other cause for temperature, and it was believed that it would fall

when the child began to receive proper nourishment. Late in the afternoon the temperature was found to be 105.2°.

The child cried at frequent intervals, and seemed feverish and uncomfortable. Although there seemed to be considerable milk, it was discovered that the child was taking none. It did not seem to know how to nurse, or, at least, it did not apparently obtain any milk during the act of nursing. Milk was drawn with a breast pump, and was given to the child, who took it ravenously. I did not see the child until twelve o'clock at night, when it had been fed by the milk thus drawn from the breast during the past six hours. The temperature was then 103.2°, and the child was reported to be more comfortable than it had been during the early evening.

During this day very little urine, if any, had been passed, but during the evening it began to be passed more freely. It was so loaded with urates that they were left as a sandy deposit upon the napkins. Upon one napkin a sandy deposit was left of a yellowish red color over an area nearly as large as the palm of the hand.

The child was put to the breast every two hours, and efforts were made to teach him the art of nursing, which he seemed to acquire without further trouble. Water was also ordered to be given in quantities as great as he would take. At first he took two ounces at a time, but after twenty-four hours almost refused to take any water. The symptoms rapidly subsided, and he fell into the routine of a model infant, nursing regularly, sleeping quietly in the interval, and crying very little. Within thirty-six hours the temperature fell over seven degrees, reaching a point below the normal, as shown by the accompanying chart. The infant continued to thrive, and has since exhibited no abnormal symptoms whatever.

113 WEST NINETY-FIFTH STREET.

Clinical Memoranda.

A COMMON CAUSE OF CRYING IN THE NEW-BORN.

BY THOMAS S. SOUTHWORTH, M.D.,

Attending Physician, Nursery and Child's and Randall's Island Hospitals; Physician to Dispensary of Babies' Hospital; Lecturer on Pediatrics, New York Polyclinic.

On the evening of November 29, 1898, a primipara was delivered of a strong male child, which cried lustily and, after being bathed, fell asleep. As the mother's breasts were well developed and the child strong, instructions were given that the child be put to the breast every six hours for the first day, and every four hours the second day, and that boiled water, sweetened with cane sugar, be given every two hours between the nursings.

It subsequently transpired, that as the child slept soundly between the nursings, the latter part of the order was disregarded entirely or the water given but a few times. At noon on the third day word was received that the child was sick, and on arrival at the house the nurse said that it had cried almost constantly for the past eighteen hours as if suffering from colic, sleeping but little and passing no urine since the early hours of the morning.

When the child was undressed for inspection marked priapism was noticeable, and the placing of the somewhat cool hand over the region of the bladder was followed by the discharge from the penis of some four to six drachms of urine of so turbid brown a color as to attract the attention of all present. This left a yellowish brown discoloration upon the napkin with no traces of pink. Priapism immediately ceased, and the child who had before been crying steadily fell into so sound a sleep that the subsequent examination did not awaken him. The thermometer placed in the rectum registered 102.6° (inanition temperature?). A weak modification of milk was ordered to be given every four hours alternating with boiled water after taking the breast. These, however, were again not given as the child thereafter slept soundly after each nursing. The rectal temperature the following morning had fallen to 100°.

The so-called uric acid infarctions of Virchow formed by the deposits of uric acid and urates in the straight tubules and

papillæ of the kidneys in new-born infants have been recognized for some time as a possible source of irritation as they remain *in situ*, or are washed out by the scanty secretion of urine. Most modern text-books make some mention of the subject although it is frequently incorporated in the section dealing with the formation of calculi. Yet it is rare to find the practitioner who thinks of this cause of crying in infants, unless it be *post facto* from the colored stains upon the diaper.

It is extremely probable that much of the supposed pain of colic in the new-born for which they have, from time immemorial, been dosed with fennel and other aromatic teas, is due to these sources of irritation in the kidney, ureters, bladder or urethra. Boiled water, which should be given to every infant at regular intervals, for more reasons than one, pending the establishment of lactation, will dilute the urine and prevent or alleviate the discomfort. The rather unusual opportunity afforded the writer of observing matters in this case, together with the subsequent course of events, point clearly to the urine as the cause of the crying, whereas, had no such observation been made, hunger and inanition might readily have been considered a sufficient explanation of the symptoms.

47 WEST FIFTY-SIXTH STREET.

Morbus Maculosus Werlhofii in an Infant.—Axel Madsen (*Ugeskrift for Laeger*) records the case of a male infant, eighteen months old, well nourished and developed, who three days previously had developed a rash on the body and extremities, and had had six or seven evacuations of the bowels daily. The rash consisted of petechiæ, and of more widespread eccyhmoses on the thighs, and during the last two days pure blood had been passed from the anus both at the time of defæcation and at other times. Small blood travasations were seen on the lips. The temperature was normal, and there was neither albumin nor blood in the urine. The icebag was placed on the abdomen, and stimulants were administered. The diarrhœa became less, but the melæna continued, consequently injections of tannic and gallic acid were given; in four days the bleeding ceased, and in ten days complete cure resulted.—*British Medical Journal.*

ACUTE CEREBRAL PARALYSIS IN THE COURSE OF INFECTIOUS DISEASES.

BY DAVID BOVAIRD, M.D.,
New York.

The occurrence of acute cerebral paralysis in the course, or as a sequel, of an infectious disease is sufficiently rare to render the notes of such cases of interest.

The obscurity that surrounds the nature of the process leading to such paralysis lends peculiar interest to the results obtained from *post-mortem* examinations. So often in cases in which the clinical symptoms have been most pronounced, and even when the paralysis has persisted for days, does the most careful examination of the brain fail to disclose any adequate lesion to explain the symptoms, that it gives pleasure to be able to report positive results.

CASE I.—March 11, 1896. A girl, aged two and a half years; in the midst of an epidemic of measles, she was taken sick with characteristic symptoms, and in the afternoon of the same day a typical rash appeared. For four days the temperature ranged from 103° to 105°.

On the 12th she was somewhat delirious, otherwise there was nothing remarkable in the course of the affection.

On the 15th the rational and physical signs of bronchopneumonia were developed.

On the morning of the 17th, the pneumonia being still present, the patient had a convulsive seizure, marked by a sudden turning of the head to the left and rigidity of the right arm and leg. The convulsion was followed by loss of power in these parts. Half an hour later there was a slight return of power, but in the afternoon the paralysis of the right arm and leg was complete. There was a slight rigidity of the parts; the patellar and plantar reflexes were absent. The face was not involved. The child failed rapidly, and died at eleven o'clock.

At the *autopsy* made the following afternoon there was found in the outer half of the left optic thalamus, just external to the internal capsule, an area triangular in section, each side measuring about three-eighths of an inch, much redder and softer than the surrounding tissue. Microscopical examination

of sections from this area showed a marked engorgement of all the smaller vessels within the area, together with numerous minute hemorrhages from them. Apart from the damage done by these microscopic hemorrhages, the brain substance appeared normal.

CASE II.—December 11, 1898. A boy, aged ten months, was taken sick, with temperature of 102° and a diarrhœa.

December 13th.—The eruption of measles appeared; temperature, 102°.

December 17th.—Fever continues, and he has developed signs of pneumonia of left lower lobe; the temperature ranges from 102° to 105°.

December 28th.—Temperature ranges from 101° to 102°; he develops a nasal discharge, and an exudate is found upon the right tonsil; Klebs-Loeffler bacilli found in cultures; given antitoxin.

December 31st.—Signs of pneumonia continue; sibilant and sonorous râles all over both chests; temperature, 103° to 105°.

January 3d.—Temperature continues high—101.8° to 104°; pulmonary signs much less marked; few subcrepitant râles over left chest, both anteriorly and posteriorly; white, sloughing tissue on both tonsils.

January 4th.—After a restless night had a general convulsion; temperature, 105°. He became comatose; the head was retracted; the left arm and leg were rigid, with twitching of the fingers and toes; later a twitching of the left side of the face.

January 6th.—Paralysis of left arm and leg; semi-comatose; temperature much lower, ranging from 98° to 102°.

January 12th.—The paralysis of left arm and leg has continued; he has remained semi-comatose all the time; the temperature has gradually fallen, but the child has failed steadily, and died at 7.45 A.M. Previous to death a twitching of the right arm and leg was noted, but there was no general convulsion.

The *autopsy* showed caseous bronchial glands, with a simple broncho-pneumonia of both lower lobes, the left being more involved. The brain showed an intense congestion of all the superficial vessels, especially over the vertex, with a transudation of blood into the meshes of the pia mater over the anterior half of the right hemisphere and the posterior half of the left. There were no hemorrhages or other gross lesion of the brain substance.

Address.

DELIVERED BEFORE THE PHILADELPHIA PEDIATRIC SOCIETY AT THE MEETING OF JANUARY, 1899.

BY FREDERICK A. PACKARD, M.D.,
The Retiring President.

When the formation of this Society was under consideration, a little more than two years ago, the question naturally first discussed was the existence of a need in Philadelphia of a special association for the study of pediatrics. At the present time there is so much specialization of scientific as of other work that there is decided danger of our too closely approximating the condition of various mechanical trades wherein subdivision of work has produced exceedingly fine results in execution, but has also increased the danger of impeding progress by removing the ability of men to take broad views and apply general mechanical laws to the advancement of invention. The all-round mechanic of the olden time is disappearing and, it would seem, not without leaving a place difficult to fill. In medicine the same forces are at work, the minute attention to subdivisions producing more accurate results, but, it is to be feared, with some loss of appreciation of the broader views that can only be acquired by less exclusive attention to too minute details. The old system of apprenticing in the mechanical arts produced less minutely exact but more broad-minded workers than will be found in the near future.

The mushroom specialist without previous experience in general work, closely resembles the mechanic who can make a screw with the most mathematical exactness but is without knowledge of other mechanical work or of the machine of which the screw forms a part. That specialism has advanced our knowledge of the processes of health and of disease is a proven fact, but the minute knowledge gained by painstaking investigation on the part of special workers in limited fields would be of little value unless there still existed workers in broader fields who could gather together the results of the various special workers and fit them together.

Now it has been claimed that pediatrics is not a proper specialty. This is only partly true, as it cannot be denied that the successful treatment of children certainly requires

special study—study that is not acquired by ordinary medical reading, and that is necessarily neglected by undergraduates of those teaching institutions wherein no provision is made for instruction in this division of general medicine by one who has devoted his time and ability to the study of disease as it occurs in infancy and childhood. I venture to assert that were most consultants of large renown in the field of general medicine to be asked to decide upon the proper constitution of a milk-mixture for an infant with enfeebled digestion, they would be as apt to make the proteid percentage 6.50 as to hit upon the due proportion of carbohydrate. It is necessary, therefore, that some with large experience should keep in touch with advancing knowledge in pediatrics. To this extent, at least, is pediatrics a specialty.

We have to remember, again, that the physical signs in childhood offer some peculiarities that are apt to be overlooked or misinterpreted by one who is entirely occupied with the diseases of adults. I would merely mention in this connection the frequent occurrence of a typical cracked-pot sound upon percussing the chest of a crying child and of a square dull patch at the base of the left lung posteriorly which simulates a localized pleural effusion and Ewart's sign of pericardial effusion.

The object of all medical societies is or should be the offering of opportunity to compare experiences, to discuss moot questions and to keep members in touch with each other's work. In societies which might be called general in character one naturally hesitates to read a paper that would interest but a small portion of the members present, and discussion upon papers is not so full as is the case where all of those present are interested more directly in the same subject.

In treating children we find constantly that, partly owing to the marked influence of reflex disturbances, some knowledge of all the specialties is a decided advantage, even some idea of obstetrics being of value from the influence of the processes of normal and abnormal child-birth upon the health of the child. I would, in this connection, especially mention the occurrence of birth-palsies, of atelectasis, and of congenital heart disease. This, therefore, renders the ground covered by pediatric study a very broad one, so that the Society has within the past year listened with interest and profit to articles especially concerning

the fields of surgery, ophthalmology and orthopedics, in addition to those relating to medicine proper.

That pediatrics is a study of sufficient interest to warrant the formation of what the newspaper reporters would delight to speak of as a "local" society, for its study and discussion is shown by the continued interest taken in our Society by the members, which has continued through its second year. And by this sentence I am reminded of my duty according to the by-laws, a duty that I have so far neglected in being tempted to branch out in a defence of our existence.

During the past year nine meetings have been held. The average attendance has been a little more than thirty-eight members, the smallest being twenty-eight, the largest sixty-seven. We have heard twenty-five papers, including Dr. Northrup's interesting and suggestive paper read at the April meeting. An important part of our meetings has been the exhibition of patients, of which we have had presented thirteen, a number that could be increased with advantage. Our membership at present is 258. During the past year we have lost by death two, by resignation three members; while, to offset these, twenty-two new members have been elected. What, to my mind, is an eminently proper function for the Society to perform comes before you for the second time to-night. I refer to the appointment by the Society of a commission whose duty it shall be to endeavor to secure a better milk supply for infant feeding. No one interested in philanthropy, in public hygiene, or in pediatrics can fail to appreciate the immense advantage that would accrue from such an improvement in our milk supply as may, theoretically at least, be obtainable by such a commission. If this Society can be instrumental in pushing it through to completion, we shall have been created by no means in vain.

From the brief statistics regarding our year's work it will be seen that our Society has safely passed through its "second summer," is in quite lusty condition, and, I hope and think, with steady gain in weight. My serious endeavor to find some suggestions to offer for our future work has been fruitless. In conclusion, I desire to again thank the Society for the honor that they conferred upon me in electing me to their highest office, and to state that my gratification has not been diminished after looking "the gift horse in the mouth."

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

MARCH, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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MOVABLE KIDNEY IN CHILDREN.

Floating kidney has been considered of rare occurrence in children. Dr. Jules Comby, however, believes that it is more common than is usually supposed. In writing upon the subject in a recent number of the *British Medical Journal*, he reports eighteen cases. He has watched for these cases for several years, which no doubt, largely accounts for the number seen. He believes that the condition is not uncommon at any age, though it is evident that it is less common in children than in adults, particularly in thin and anæmic women.

Of the eighteen cases reported by Dr. Comby, two were aged respectively one month and three months, six were between one and ten years, ten were above ten years of age. But these figures corresponded only to the dates of the examination and diagnosis; the mobility no doubt dated further back than this; sixteen of the cases were girls, two were boys, the same proportion of the condition in the female sex observed in adult life. In fourteen of the cases the mobility was associated with dyspepsia and dilatation of the stomach; herditary syphilis was obvious in two cases, chlorosis in two, lienteric diarrhœa in one,

migraine in one, and psoriasis in one. In nearly every case the affection was latent, in two it had been mistaken for a chronic appendicitis, twice it had been found and treated.

As regards cause it was not possible to attribute it to the pressure of the corset, as the greater number of the patients wore neither corset nor belt. Nearly all were dyspeptic, having gastric troubles or pains in the stomach, suffering perhaps as a result of gastro-intestinal distension to which ill nourished children are subject, from elongation of the suspensory ligaments and prolapse of the viscera.

The congenital origin of floating kidney is believed by Litten, Gutterbock, Ewald, Albarran to be the explanation of all cases. The kidney is possibly provided with a too lengthy pedicle, which causes it to float in the abdomen either spontaneously or as the result of some special effort of a distension of the stomach, of a tight constriction, or of a hypertrophied liver, or an injury. It is difficult to say why women are more liable to this organic displacement than men, but no doubt it has some connection with the abdominal conformation of the former.

THE SYMPTOMS OF MOVABLE KIDNEY.

The symptoms, as stated by Comby, are variable and frequently obscure, and do not afford much guide to diagnosis; often the affection is absolutely latent, and is passed over. Sometimes there is paroxysmal pain, which, on account of its seat on the right side, is attributed to appendicitis. The pains may come on after some unusual effort or fatigue.

In our own experience, movable kidneys have always been very sensitive to the touch and have continued more or less sensitive as long as they were out of normal position. Numerous cases have been reported, however, in which the tumor was neither painful nor sensitive to touch.

In rare cases the kidney may become twisted and the ureter occluded, and a hydronephrosis, which may be either transitory,

intermittent, or persistent, may supervene. Dyspepsia or constipation is often associated with a movable kidney. But no one symptom can be relied on, and the right iliac region must be carefully explored.

While in some cases of movable kidney, the diagnosis is difficult, in others it is extremely easy. In no other condition is a hard, round, movable mass discovered in the abdomen suddenly. This tumor is sometimes so distinct that it can be grasped in the hand. In other cases it is somewhat fugitive and can only be grasped through the abdominal wall by supporting the lumbar region with the other hand. The mass usually appears near the umbilicus or in the hypogastric region.

The younger the patient, the more difficult is the diagnosis. The condition is often undiscovered because there are no symptoms; investigation of the part is difficult, and a child does not lend itself satisfactorily to exploration. But none of these difficulties are insurmountable. Among the conditions, according to Comby, with which it may be confused are to be remembered: Coprostasis, appendicitis, different cystic or solid tumors of the kidney, perinephritis, stone. It is not impossible to eliminate these different possibilities before proceeding to diagnose the existence of movable kidney.

TREATMENT OF MOVABLE KIDNEY.

The treatment of movable kidney is not entirely surgical. In nearly every case some medical treatment is indicated, and in many cases no surgical treatment is required. When the affection, according to Comby, is latent or well borne, when the pains are moderate or intermittent in character, rest and an abdominal belt may suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. A flannel bandage wound several times round the body, and supporting the entire abdomen, is the best means of immobilization that can be devised. A bandage, however, tight enough to support the kidney, is apt to cause colic or distress to the child.

It is of the highest importance that straining of the abdomen should be avoided. Hence, the bowels should be kept regular and free; dyspepsia should be promptly treated and abdominal indigestion prevented if possible. Acute attacks of indigestion with vomiting should receive prompt treatment, for the act of vomiting is one of the most certain means of forcing a kidney from its normal position. It is practically impossible to keep a kidney in proper position after it has been once or twice displaced, if the child is subject to attacks of acute indigestion with vomiting.

The case should become a surgical one, if the pains persist or become unbearable, or attacks of peritonitis or hodronephrosis through twisting of the ureter occur. An operation should then be performed for fixing the kidney to the posterior abdominal wall.

THE JACOBI WARD FOR CLINICAL INSTRUCTION.

The recent opening of this ward at Roosevelt Hospital was an important event in the history of pediatrics. It is, we believe, the first ward in this country designed for the clinical teaching of pediatrics to students of medicine. It is the result of a gift of $50,000 by some person whose name is not announced to the public.

The ward forms part of a new pavilion erected in the grounds of Roosevelt Hospital. It is connected with both the hospital and the Syms operating pavilion. The terms of the gift provide that Columbia University shall name the clinical teachers. Dr. Jacobi is now holding clinics in the ward in addition to his regular clinics in the College of Physicians and Surgeons. The system of instruction is bed-side teaching to small sections from the college classes. Such teaching is essentially different from that given in the usual amphitheatre clinic or dispensary class. It has long been regarded as one of the most important factors in medical education in other departments. It is satisfactory to know that pediatrics is at last able to boast of at least one such

ward in this country. The opening of the ward, designed as it is primarily for bed-side instruction of medical students, marks an epoch in the teaching of the diseases of children. It seems very appropriate that the first ward designed for this purpose should bear the name of the man who has inaugurated so many advances in the teaching and practice of pediatrics. It is a most fitting tribute to his life of devotion to that department of medicine.

The wisdom of the person endowing this ward, whose name we do not know, is certainly deserving of more than passing mention. The first and primary object of a hospital should be to afford the best care of the patient which it is possible to give. This aim we have before had occasion to say should never be sacrificed to any other consideration. A second and scarcely less important object, and in no way incompatible with the first, should be to render the knowledge constantly gained in hospital wards, available for the common good, and to spread the humane influences of the hospital far beyond its walls. Every hospital should, therefore, be a teaching institution so far as it is possible without detriment to its patients. The advantages of instruction in its wards should not be limited to a few internes. When these principles are adopted and practiced broadly and humanely, the good wrought within the hospital structure, be it ever so great, may be small compared with the good which those instructed in its wards accomplish year after year, far and wide through the community.

The influence for good of a teaching hospital is beyond computation and the individual who endows a hospital or a ward of that character shows great wisdom, which, unfortunately, does not always accompany generosity and philanthropy.

ACUTE GASTRIC ATTACKS IN CHILDREN.

In a recent number of the *Dublin Journal of Medical Science* Dr. Langford Syms calls attention to the fact now well demonstrated that many of the dyspeptic derangements of children

are chemical processes arising from organic and bacterial decomposition of food, and *not* organic structural disease of the tissue of the body. They are fermentative and septic processes arising in the contents of the digestive tube, and are not gross lesions of the tube itself. Of course in time they will induce changes in the mucous membrane, but these are secondary and not primary. If confined to the stomach, vomiting and gastric symptoms predominate, but if passing further down the tube the intestinal manifestations are somewhat different, and pain, flatulence, colic, or diarrhœa results. Expulsion of the contents of the stomach, if sufficiently early, effects a natural cure, and the trouble may cease in three or four days.

Infarctions of Uric Acid are frequent in new-born infants, and those of a hemorrhagic and pigmentous nature are not uncommon, and calcareous deposits are at least of occasional occurrence in the kidneys of the newly-born. Gravel and stone are also frequent in infancy. All these foreign masses lead to disintegration of the endothelia, to hemorrhage, and to inflammation. Moreover, the rapid destruction of the red blood-cells in the normal newly-born, and the transformation of hematin into hematoidin, which is identical with bilirubin and biliverdin, lead to obstructions and thromboses. It is a large supply of water that should be given to every newly-born infant as a matter of course, while the milk-supply is absent or scanty, that will prevent many of the dangerous ailments of the first weeks of life.—*Jacobi, Philadelphia Medical Journal.*

Bibliography.

The Practice of Obstetrics: By American Authors. Edited by Charles Jewett, M.D., *Professor of Obstetrics in Long Island College Hospital, Brooklyn, N. Y.* With 441 engravings in colors and black, and 22 full-page colored plates. Philadelphia and New York: Lea Brothers & Co. Pp. xvi., 763. Price, cloth, $5.00; leather, $6.00.

This work is of interest to pediatric practitioners, because of the unusual amount of space devoted to the infant. The chapter on the new-born child and its management by Dr. E. H. Bartley occupies thirty pages and is, on the whole, an excellent one. His directions for feeding, while concise, are far better than those appearing in most works on obstetrics. The percentage modification of milk is advocated, instructions being fairly clear and definite.

Two chapters on anomalies, pathology, and diseases of the fœtus by Dr. J. M. Van Cott leave little to be desired. The illustrations and plates are extremely good, and the chapters form an excellent monograph upon the subject.

A chapter of over twenty pages by Dr. H. D. Chapin on malformations, injuries, and diseases of the new-born child is also worthy of especial mention. Such a chapter could hardly be expected to contain much that is strictly original or new. Dr. Chapin has made it, however, a very excellent one.

Although the field has already been well tilled, the present work is unquestionably a valuable addition to obstetric literature, and will, no doubt, prove a popular one.

Osteomyelitis in Infancy.—Swoboda (*Wien. Klin. Woch.*) has treated this subject. Although this is a disease which has as yet received very little attention, he thinks it is one which should bear more study. The diagnosis is to be made between that of tubercular and syphilitic disease; and yet it frequently is difficult, as tubercular disease, as well as osteomyelitis, often begins with temperature, pain, and other evidence of an acute invasion. On the study of the cases already published, the following facts he considers as distinctive: (1) The multiplicity of the foci in the bone; (2) the frequency of the separation of the epiphyses; (3) the frequent involvement of the joint; (4) the acute course of disease. For the treatment, he speaks of the rapid cure by the early cutting down on the diseased focus, and evacuating pus and giving drainage. This, however, must be early to be successful.—*Boston Medical and Surgical Journal.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 12, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

BIGEMINAL HEART.

DR. EMILY LEWI presented a little girl seen at the Children's Clinic of the Good Samaritan Dispensary, in Dr. Koplik's department, through whose courtesy it was reported. The child had been in good health except during the past six months when she had suffered a good deal from precordial pain and headaches, and had been quite nervous. A true bigeminal heart is one in which the revolutions of the heart are in groups of two, each group being followed by a complete systole and a normal diastole, but in this case the condition was even more rare, because the second of the revolutions is not complete. The child is extremely pale and gives evidence of poor general nutrition. The character of the pulse and of the heart action was shown by the pulse-tracings, in addition to the information furnished by auscultation. The speaker said that in adults the bigeminal heart is usually observed in connection with aortic obstruction; the literature, as regards children, was extremely scanty.

DR. L. EMMETT HOLT said that this was the first case of the kind that he had seen in children. This had also been the experience of the Chairman, but Dr. Lipman had seen one case.

AN APPARATUS ADAPTED TO SIMPLIFY THE HOME MODIFICATION OF MILK.

DR. L. EMMETT HOLT then presented an apparatus, designed by a glass manufacturer, named Ernest Strauss, for this purpose. It is nothing more than a sixteen-ounce glass graduate, divided into six panels, each one containing a scale of markings adapted to a particular formula for modifying milk. Thus, during the first few days of life, when it is desired to use a milk represented by the formula, fat 2 per cent., sugar 6 per cent. and proteids .6 per cent., it is only necessary to place in the graduate

enough milk-sugar to reach up to the line marked "milk-sugar"; then add boiled water up to the water-mark, then cream up to the cream-line, milk to the milk-line and lime-water up to the mark for that ingredient. Somewhat later, when one wishes to use milk having the composition, fat 2.5 per cent., sugar 6 per cent. and proteids .8 per cent., the same process is gone through, with the exception that the markings on the second panel only are used. The six formulæ given on the graduate cover the first year of life. After the desired modification has been effected, the milk is poured into bottles and pasteurized or sterilized. All of the formulæ were calculated on the basis of a 20 per cent. cream, *i.e.*, skimmed cream or *thin* centrifugal cream.

THE ETIOLOGY, FORMS AND DIAGNOSIS OF ECZEMA, WITH SPECIAL REFERENCE TO ITS OCCURRENCE IN INFANTS AND CHILDREN.

Dr. S. Pollitzer read a paper with this title. After speaking at some length regarding the various views that had been entertained concerning the nature of eczema, he quoted the following modern definition of eczema: "A chronic cutaneous catarrh, characterized by desquamation and itching, with a tendency to vesiculation." He rejected as entirely without foundation the view that eczema is a diathetic disease, but accepted unreservedly the parasitic theory. Attention was directed to the fact, that the chief difference between the eczemas of childhood and those of adult life lay in the greater liability of children to secondary infection. In infantile eczema of the scalp impetiginous lesions soon develop, and the poison is quickly carried by the fingers of the little one to other parts of the body. According to his experience, impetigo contagiosa had been an almost invariable accompaniment of prediculosis capitis. In children, eczema shows a far greater tendency to appear on the cheeks, and an attempt had been made to explain this predilection on the theory that as the act of suckling or feeding produces a hyperemia of this region, as a result of vaso-motor disturbance, the skin of the cheeks becomes a more congenial soil for the development of the germs of eczema. In distinguishing between scabies and eczema, it should be remembered that the lesions of the former are discrete and do not affect the face and scalp.

THE TREATMENT OF ECZEMA IN INFANTS AND CHILDREN.

Dr. Charles W. Allen read this paper in which he said that infantile eczema required proper nursing and intelligent supervision just as much as a prescription—the clothing, the bathing, the avoidance of coarse towels and irritating soaps for the toilet, the correction of constipation and indigestion, the examination of the breast milk, both as to quantity and quality, all require attention. It was of the greatest importance to restore the scalp to a healthy state, and maintain it in that condition. As an ointment-base nothing was superior to zinc oxide ointment. If the crusts are not easily removable by the use of oil or soft soap, it was well to make a cataplasm of potato flour and add a little lysol. An exceedingly efficacious local treatment consists in the use of a 3 per cent. aqueous solution of methylene blue. Where the eczema was impetiginous, ammoniated mercury, properly diluted, would be found useful. Dr. Allen then exhibited a simple combination of mask and cap, made of a single piece of muslin, which he had designed for the purpose of retaining the local applications and for preventing the patient from scratching. With one of these as a pattern, the mother could readily make others as they were required. The fact that under exceptional circumstances the rapid disappearance of an eczema was followed by some internal disease had led to a very widespread fear of causing the prompt disappearance of cutaneous manifestations, but these instances were so rare that they might be looked upon as the exceptions that prove the rule. In his opinion, the great majority of cases of eczema do best under a wise combination of external and constitutional treatment.

THE INFLUENCE OF DIET IN THE TREATMENT OF ECZEMA IN INFANTS AND CHILDREN.

Dr Henry Dwight Chapin read this paper. The close relationship observed in early life between the external and the internal epithelium was pointed out, as also the mischief done by scratching and consequent secondary infection. Speaking of breast-fed infants, Dr. Chapin said that eczema in them, when due to intestinal fermentation, was usually dependent upon an excess of either fats or albuminoids in the milk. If the percentage of fat was too great, the baby would not present such obvious indications of malnutrition as where the albumin-

oids were at fault. It would often be found that the mothers were taking too freely of stimulants, such as malt liquors, or were eating excessively, especially of meats. A correction of these errors in diet, and insisting that the mother shall take more exercise in the open air would often suffice to cure the baby's dyspepsia. It should also be borne in mind that when a child is suckled very often the milk becomes thick and rich. Where bottle-fed infants are troubled with eczema the cause is usually found in an excess of proteids. He was still a believer in the value of diluting milk with decoctions of the cereals, although this practice was not wholly free from objection because of the introduction of so much starch. The late Dr. J. Lewis Smith had held the view that by prolonged heating the starch could be converted into soluble starch, or dextrin, but according to certain experiments that he had made some years ago this change did not occur. He was, therefore, forced to the conclusion that the benefit so commonly observed in practice from such addition to milk is explicable only on the theory that it favors the digestion of the milk by its mechanical action. The objection to the addition of the cereals may be gotten over by adding with them some extract of malt, or other preparation of diastase. Where older children are affected with eczema, every effort must be made to exclude, as far as possible from their dietary, easily fermentable foods. They should be given but little meat, and very little boiled potato, and should be allowed milk, meat broths, zwieback and similar articles of food. There was hardly any common article of diet so liable to set up intestinal fermentation as boiled potato. Dr. Chapin said that if he were compelled to treat eczema exclusively by either local or constitutional measures, he would select the latter.

Dr. Walter Lester Carr sent his contribution to the discussion of this subject in the shape of photographs of an Italian baby of nine months who had had a well-marked facial eczema. The child, although exclusively breast-fed, was rachitic. No local treatment was employed; simply a change of diet to fresh cow's milk and the internal use of cod liver oil, yet under this purely internal treatment the eczema had rapidly disappeared. This case was selected as a fair illustration of the average needs of infants affected with eczema.

Dr. J. A. Fordyce said that it did not seem to him probable that eczema was due to infection with a specific germ, but was

the result of inoculation of several germs. There must be an individual predisposition of the skin, as eczema was especially prone to occur in certain families. As an ointment-base he preferred a mixture of equal parts of lanolin and cold cream. To this could be added in suitable cases twenty or thirty grains of ammoniated mercury to each ounce of the ointment. In seborrhoic eczema he advised the use of ten to twenty grains of sulphur in each ounce of the ointment-base, with or without the addition of oxide of zinc or bismuth. A very common type of infantile eczema was what Unna called "nervous or reflex eczema," a variety proving very rebellious to treatment. Due attention should be given to the diet and digestion, and the diseased parts covered with soothing applications. For surfaces that had become much abraded or fissures by scratching and secondary infection, he recommended the application of a 2 or 3 per cent. solution of nitrate of silver.

Dr. B. Laposki insisted that eczema was not a disease, but only a symptom, and that this had been well illustrated by the divergent views expressed in the papers of the evening. He had not found general bathing prejudicial, provided the eczematous areas were carefully protected with ointment, applied fresh both before and after the bath. The mask presented by Dr. Allen he considered to be an exceedingly valuable device.

Dr. Thomas S. Southworth expressed the opinion that the reason why infantile eczema had so long been a reproach to the general practitioner was that he was too prone to consider that his whole duty had been done when he had written a prescription. The application of water to the eczematous patches usually irritated them; it was far better, for purposes of cleanliness, to use olive oil. In most cases the diet should consist very largely of milk, and starchy articles should be given very sparingly. The important point in the local treatment was to use soothing applications, and probably the best of those commonly employed was oxide of zinc ointment. When there was much infiltration or scaling, it was advisable to add tar up to one-fourth of the volume of ointment. For the eczemas so commonly observed behind the ears of children there was nothing superior to a 2 per cent. ointment of ammoniated mercury.

Dr. Linneus E. La Fetra called attention to the very common acidity of the urine in these cases of eczema, and the difficulty of curing the cutaneous lesions until the acidity had been

reduced, or an alkaline reaction had been substituted. The eczema often seemed to be a manifestation of a rheumatic diathesis. An occasional mercurial purge was beneficial.

Dr. W. L. Baner thought it must be rare that an excess of fat in the food would cause eczema for the reason that this cutaneous affection often yields most satisfactorily to the addition to the food of an extra quantity of fat, particularly of cod liver oil. He half suspected that an important function of the ointments so commonly used was to supply additional nutriment to the affected areas, in addition to that which is generally conceded, *i.e.*, the protection of the surface from irritation and secondary infection.

Dr. Edmund L. Cocks took the position that eczema is always secondary to some internal disorder, and added that since he had expressed this view before the Harlem Medical Association, and had been rather severely criticised for so doing, he had given the subject still greater attention and study, with the result that it had only served to strengthen his former convictions. Both the urine and fæces would be generally found quite acid, and until this acidity had been overcome, but little progress would be made by external treatment. Of all the local measures, the solution of methylene blue had yielded the best results.

Dr. Pollitzer said that he did not believe that eczema was ever produced by intestinal disturbance or by an excess of uric acid in the system, whatever that might mean; there was but one cause for an eczema just as there was but one cause for a furuncle.

Dr. Allen, in closing, said that in his last 1,000 cases of eczema he had depended almost entirely on external measures, giving internal remedies only when clearly indicated. The chief value of constitutional treatment was to hasten recovery and prevent relapses.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, January 10, 1899.

F. A. PACKARD, M.D., PRESIDENT.

MULTIPLE SARCOMA IN A BOY OF FOUR YEARS.

DR. F. A. PACKARD presented a case of this character.

DR. J. P. CROZER GRIFFITH.—The thing that struck me in Dr. Packard's patient was the great anæmia. It recalls to my mind a case seen some years ago. The patient was a youth; there was decided fever, and the anæmia was so marked that the case was supposed to be an instance of pernicious anæmia. It came to autopsy, and there was found widespread internal sarcoma. It would be very interesting to know what the action of the hypodermic injections would have been in the case of the child reported this evening. I saw him repeatedly in the Children's Hospital, and I was quite anxious to know whether any good would come from the treatment proposed.

DR. EDSALL.—I wish to ask whether there was any record of the presence or absence of albumoses in the urine. In a considerable number of rather obscure widespread sarcomas of the skeleton albumoses have been found in the urine, and their presence in such cases has a certain degree of diagnostic importance. I have seen records of the discovery of albumoses in other tumors than those of bones, and think it is important to learn whether they are the result of sarcoma of bones alone or may occur with generalized sarcomatous growth.

DR. PACKARD.—I regret that an examination for albumoses was not made. I was entirely ignorant of the fact that they had been found in such cases, otherwise I would have made it. My own regret in the failure of this boy to be brought back for treatment by Coley's fluid is very great. It was such a perfectly hopeless case, with any other means of treatment, that, in spite of the fact that in some quarters discredit is being thrown on the Coley treatment, since cases have been seen to improve very much, and in many instances to be entirely cured, I wished to use it. Unfortunately for us, as we were negotiating for some of the fluid, the parents of the child took him away and failed to return him.

The address of the retiring President was read by Dr. F. A. Packard. (See page 185.)

Current Literature.

MEDICINE.

Jacobi, A.: The Teaching and Practice of Pediatrics. (*Philadelphia Medical Journal.* 1898. Vol. ii. No. 25.)

Of the deaths of infants that take place during the first year, 25 per cent. occur in the first three months. Many of the causes of this waste of life are beyond medical aid. Seasons and climates, race, city or country, soil and dwelling, precocious marriages, financial circumstances, the prices of foods and dress-goods, the prevalence of endemics and epidemics, of alcoholism and syphilis, the ignorance of the people and of medical men, are amongst the most influential causes of excessive infant-mortality. Many of them could be prevented by social improvements, which have to go beyond the puny efforts of floating hospitals and fresh-air piers. Still even they prove that the public conscience and the sense of mutual responsibility are awakening, and it is to be hoped that our people will rise to the recognition of its own perishing reconcentrados, young and old.

The English infant-life protection-act of 1872 and the French *loi protective des enfants* of 1874 are amongst the first instalments of the public debt paid to infant-life. Foundling hospitals and asylums and special hospitals have partially missed their aims, for no other reason than because the laws of infant-life, health, and mortality were, and still are, but imperfectly understood. It was mainly the frontier territory of the pathology of the very young that was a terra incognita. Our ignorance was the cause of indolence. It became an axiom that nothing could be done with and for small infants. It has taken a long time for us to be taught that no class of our population and of our patients is more endangered by waiting idleness—we prefer to call it expectancy—than the very young; it will still take a long time before the physician who is thoroughly conversant with the physiology and pathology of infancy will be officially recognized as a peer amongst the teachers of medicine, and pedology as one of the most desirable facts of medical science.

The first special clinic in pediatrics, for which a single weekly hour was considered all that could be spared, was established by the author in the New York Medical College in 1886,

and it died with the college. Since that time similar clinics have gradually been established all over the States; but pediatrics is not yet given a leading part. In most colleges the attendance upon children's clinics is not obligatory this very day. Few professorships exist for pediatrics; and they are mostly nominal. The neglect shown it by the official faculties is readily taken by students as their guidance, and the results are unavoidable. Infants cannot complain, and they cannot vote; even less so than the privates in an army. The old principle, "infans nondum homo," an infant is not quite a human being, has not died out yet. That the embryo and the fetus are of still less account is only too true. Genuine humanitarianism has not yet risen to the dignified place held even by the unborn in the teaching of at least two religions—the Jewish and the Roman Catholic. The author holds that teaching pedology as an obligatory study, mainly at the bedside in children's hospitals, and raising it to the dignity of full chairs in our leading institutions, is amongst the most valuable means of reducing infant-mortality.

As the principal mortality of the first year is due to disorders of the digestive, and that of the following period to those of the respiratory organs, the preventive measures to be taken appear to be self-evident. Infant-feeding has been made relatively safe by the methods calculated to destroy pathogenous germs. By rendering infant-food germ-free, a number of diseases and deaths are prevented; mainly, the army of infectious intestinal disorders, with consecutive renal, meningeal, encephalic, and respiratory troubles, not to speak of the chronic marasmus that swells the death-lists often without an appreciable anatomical cause.

Beyond the means of prevention furnished by bacteriology, we have not advanced much these scores of years. The same questions belonging to the chemistry of the milk, and to the composition of infant-food, are answered differently in different quarters, with equal assurance. A famous author, in spite of the physiological fact known these thirty years that there is saliva and pancreatic juice in the infant economy, has only lately been converted to a faith in farinaceous foods, and is experimenting with other than milk-sugar; and he comes to the conclusion that the feeding on woman's milk may be carried on too long. Many begin also to find out that cow's milk may be done to death by inconsiderate cooking, and that the latter is not rendered more sacred or more wholesome by calling it sterilization.

The belief that infants and children require much food is correct. They require material not only for reproduction, but also for increase. In order to gain 25 grams daily during the first half-year, they require daily from 8 to 10 grams of proteid, 2.6 of which are demanded in the interest of growth. But over-alimentation during a normal condition has its serious drawbacks which should be prevented: Dilatation of the stomach, and diarrhœal diseases, rickets, adiposity, diseases of the skin, convulsions, biliary and renal colic, and myasthenia and myalgia depending upon the accumulation of phosphates and lactates in the muscular tissues. Over-alimentation may also lead to atrophy in different ways, so that the diagnostician of a case of atrophy has not to look for starvation in intestinal disease only.

Morse, J. Lovett: Tetány in Infancy. (*Journal of the American Medical Association.* 1898. Vol. xxxi. No. 19.)

The author refers to the fact that great differences of opinion exist with regard to what constitutes tetany. It is generally accepted, he believes, that the most characteristic symptom of tetany is muscular rigidity, this rigidity occurring as intermittent paroxysmal contractures. The duration and intensity of the contractures vary, in some cases being long and remittent, in others fleeting and occurring at long intervals. The extent of the contractures also varies within wide limits, the seat *par excellence*, however, being in the muscles of the arms, especially of the forearms. The positions assumed by the hands and feet during these contractures are very characteristic. The fingers are flexed at the metacarpo-phalangeal joints, while the phalanges are extended. The thumb is strongly adducted in the extended position. The wrist is acutely flexed and the hand turned to the ulnar side. The elbow- and shoulder-joints are not involved in the milder cases. The feet are strongly extended, sometimes in the position of pure equinus, but more often in that of equino-varus. The first phalanges of the toes are strongly flexed, the others extended. The knee- and hip-joints are usually free. Opisthotonos is not very uncommon in the severe cases.

Associated with the contractures are other symptoms, some or all of which are present in every case. These are: Increased electric excitability of both nerve and muscle to faradism and galvanism, with changes in the qualitative reaction to galvanism.

This is often known as Erb's symptom, and is probably the most constant. Increased mechanical excitability of both nerve and muscle. Special examples of this are the occurrence of characteristic contractures as the result of pressure on the large nerve trunks and arteries, "Trousseau's symptom," and spasm of the facial muscles when the skin over the trunk of the facial nerve is irritated or the nerve is struck a sharp blow, "Chvostek's symptom" or the "facialis phenomenon." Laryngospasm. Convulsions. Sensory disturbances, including pain on motion and during spasms, as well as many others impossible to determine in infants. Vasomotor and trophic disturbances, the most characteristic being edema of the wrists and ankles. Fever, which is inconstant and intermittent. The intelligence is always unimpaired, even during the paroxysmal contractures.

All agree that the presence of the peculiar paroxysmal contractures justifies the diagnosis of tetany. There is great difference of opinion, however, as to whether the presence of one or more of the other symptoms without contractures justifies the diagnosis. It is to this condition that the term "latent tetany" is applied. Even here, however, there is no consensus of opinion, some apparently limiting the term to the condition in which irritation of the muscle or nerve brings on contractures which are otherwise absent, while others consider the presence of even one symptom as pathognomonic and sufficient for the diagnosis.

As a rule, those who recognize the existence of latent tetany consider it the same as tetany, differing from the latter only in degree. If these symptoms are to be considered as pathognomonic and sufficient for the diagnosis of tetany, whether the characteristic contractures are present or not, they should be always present where there are contractures and should never occur in other conditions. Trousseau's symptom and the facial phenomenon are sometimes absent, and often only temporarily present where there are typic contractures. Moreover, Trousseau's symptom is often met with in hysteria, while the facial phenomenon is found in many other conditions, as epilepsy, hysteria, phthisis and neurasthenia.

Laryngospasm is frequent in tetany, but not constant, and is often seen in children who have no other symptoms of tetany. Convulsions and disturbances of sensation, as well as vasomotor and trophic disturbances, occur in many other diseases. It is evident, therefore, that these three symptoms—laryngo-

spasm, Trousseau's symptom and the facial phenomenon—are not constant in cases which show the typic contractures of tetany, and that they occur in many conditions in which there is no question of tetany. Hence they cannot be considered as pathognomonic of tetany, and do not, either singly or in combination, afford sufficient ground for the diagnosis either of tetany or latent tetany. They must be regarded merely as particular instances of increased mechanical or reflex excitability which may be the result of a very great variety of causes and pathologic conditions.

The only pathognomonic symptom of tetany, therefore, is spontaneous, intermittent, paroxysmal muscular contracture. The term "tetany" should be applied only to those cases in which this symptom is present, and no cases of increased reflex excitability in which this symptom does not occur should be regarded as examples of the disease. The term "latent tetany," is therefore a misnomer and should be dropped.

Numerous theories as to the etiology of tetany have been advanced, and have found vigorous defenders and opponents. The question is still unsettled, however, probably partly on account of the differences of opinion as to what constitutes tetany, and partly on account of the inherent difficulties of the subject. The theory of the older authors that it is of rheumatic origin has long been given up.

The most ardent and extreme advocate of the rachitic theory is undoubtedly Kassowitz. His line of argument is somewhat as follows: Craniotabes is a lesion of rickets. Craniotabes may be represented only by meningeal hyperemia, and hence be incapable of demonstration. Laryngospasm is due to craniotabes. Laryngospasm is a symptom of rickets. Other symptoms of increased neuro-muscular excitability are seen in rickets. They are of the same nature as laryngospasm and hence due to the same cause. Laryngospasm and other nervous manifestations are symptoms of tetany; in fact, they are tetany. Hence tetany is a symptom of rickets.

There are many obvious objections to this reasoning. It is not proven that craniotabes is the cause of laryngospasm, or that meningeal hyperemia produces the same results as craniotabes. Moreover, laryngospasm occurs in tetany when there is no evidence of rickets, in rickets when there are no other evidences of tetany, and alone when there are no evidences of either tetany or rickets.

Although not agreeing with the extreme views of Kassowitz, most of the German and Austrian authorities have accepted the rachitic theory in a more or less modified form. Some of the arguments in favor of this view are, that almost all cases of tetany show evidences of rickets, that they are both more frequent in winter, and that they occur in children of the same age. Some of the arguments against it are, that very many cases of other diseases than tetany show evidences of rickets, that the symptoms of increased neuro-muscular excitability, with the exception of laryngospasm, are rare among rachitics, and that tetany is more likely to occur in mild than in severe cases of rickets.

The fact that rickets is common all the year round, although much more so in the winter, while tetany very rarely occurs in the summer, would seem to point to some common cause for both conditions which is active only in the winter. This cause is most probably the indoor life of the winter, with its lack of sunlight and oxygen and its exposure to noxious vapors. These furnish the opportunity for the formation of respiratory toxins which may produce changes in the circulation that lead to malnutrition of various tissues with subsequent symptoms.

Several theories locating the origin of tetany in the gastro-intestinal canal have been advanced. These have received their main support from the French authorities. The dehydration and reflex theories need be mentioned only to be set aside. That of auto-intoxication, however, is worthy of careful consideration. The friends of this theory say that tetany is almost always associated with diarrhœa or other digestive disturbances.

They also state that when the digestive disturbances are relieved the tetany ceases. They attribute the frequency of tetany in rachitis to the gastro-enteric disturbances of this disease.

The opponents of this theory say that gastro-enteric disorders are very common and tetany very rare; that digestive disturbances are more common in summer than tetany in winter; and that the only basis for the assumption of peculiar susceptibility or special chemic combinations is in the imaginations of the originators.

The most recent, and perhaps the most plausible, theory assumes that there is no single pathologic cause for tetany, but that, like epilepsy, it may arise from many causes. Like epilespy, too, it must be regarded merely as a nosologic entity, and

not as a definite disease. In improper hygienic surroundings, in rickets, in gastro-intestinal disorders, in acute disease, and in various intoxications are present conditions capable of causing the formation of various toxic substances. The action of all these poisonous substances may show itself by a special modification, rather functional than organic, of the central or peripheral nervous system. The various lesions of the nervous system found in tetany are not inconsistent with this conception.

The author gives an extended report of six cases, all of which show undoubted symptoms of the disease.

Woodhead, G. Sims: Post-Diphtherial Paralysis. (*British Medical Journal.* 1898. No. 1966.)

The author in an extended paper on this subject refers to the observations of A. Miller, who gives an account of cases treated by him at the South-Eastern Hospital during the years 1896 and 1897, in which the onset was primarily (1) in the muscles of the palate; (2) in the oculo-motor muscles; (3) in the muscles of other parts; and (4) in cases of paralytic heart failure.

He collects 494 cases, of which 185 were primary paralyses of the palate, 197 strabismus, 10 paralysis of other muscles, 102 cases of cardiac paralysis, 91 of which died and 11 recovered. The bulk of the palatial paralyses occurred between the fifth and fifteenth days, none before the fourth. Of the oculo-motor paralyses the bulk occurred between the fourth and seventeenth days, none before the fourth; of the primary paralyses of other parts, half of them occurred between the tenth and fourteenth days, and none before the earlier day.

A case of primary paralysis of the palate occurred as late as the sixty-fifth day; of primary oculo-motor paralysis the ninety-first day, and primary paralysis of other parts on the fifty-first day. The bulk of the cardiac paralyses occurred between the fifth and the tenth days; a few cases occurred even as early as the second day, whilst this condition occurred in a severe form (that is, ending fatally) in 2 cases on the fifty-fourth day and in 1 case which recovered on the fifty-ninth day.

It is evident, then, that in the human subject these paralyses occur at a comparatively early date, although in numerous cases they come on at very much later stages.

Goodall, E. W.: Post-Diphtherial Paralysis. (*British Medical Journal.* 1898. No. 1966.)

The author says that since the introduction of the antitoxin treatment the incidence of paralysis following diphtheria had certainly increased. The reason of this he believes to be that patients now recovered, or at any rate lived long enough to show symptoms of paralysis, who without antitoxin would have died at an earlier period. But though the number of cases of paralysis, relatively as well as absolutely, has increased, the number of fatal cases has diminished. Moreover, if the serum treatment were commenced early enough, the number of cases of paralysis would be lower instead of higher than before. This was well shown in the post-scarlatinal diphtheria cases in ths Metropolitan Asylum Board's Hospitals during 1896. These cases were all under skilled observation from the very commencement, and the serum treatment was begun early. Among them the number of paralysis cases was considerably less than among the diphtheria cases admitted from outside during the same period, and there was only one case fatal from paralysis.

Batten, Frederick E.: The Pathology of Diphtherial Paralysis. (*British Medical Journal.* 1898. No. 1977.)

This paper is based on six cases of diphtherial paralysis examined by Marchi's method. It is an elaborate and scientific study of the subject from the side of human pathology, of which the following is a summary:

Although various views have been held with regard to the pathology of diphtherial paralysis, it is at the present time generally recognized that the lesion most commonly found is a parenchymatous degeneration of the myelin sheath of the nerves, and Martin has shown that this condition affects primarily the finer nerve branches. More recently the work of Mouravjeff would tend to show that the primary alteration occurs in the cells of the anterior horn, and this was demonstrated by Nissl's method—a method which Martin did not use. The same condition had been previously described by Crocq, though he describes the primary condition as a myelitis.

In the experiments of Mouravjeff the animals which had been allowed to live for the longest time after infection showed well-marked changes in the peripheral nerves, although no change could be demonstrated in the granules of the nerve cells.

Some of the cells may, however, have undergone atrophy. In the present series of cases the cells, not only of the anterior horn, but also of the posterior root ganglia, appeared normal. It may, however, be that the cells in these cases had had time to recover.

With regard to the affection of the posterior roots, Meyer, in 1881, showed that they were degenerated, and also that this degeneration existed on both sides of the spinal ganglion. This has been noted again, more recently by Preiz, Crocq, and Mouravjeff, and among others by Bikeles, who describes the occurrence of masses of fat globules in the posterior root at its entrance into the spinal cord; this, however, is a normal condition certainly in children, and probably to a lesser extent in adults, and hence localized granules of fat in this region should not be regarded as evidence of degeneration.

The cranial nerves have been found affected by Meyers, Bristowe, and others; Crocq, however, failed experimentally to find any degeneration. The nerves described as being affected are the third, fourth, fifth, sixth, seventh, eighth (Moos), ninth, tenth, eleventh, twelfth.

In conclusion, then, it is probable that the dominant lesion in diphtherial paralysis is a parenchymatous degeneration of the myelin sheath of the nerves, and that this degeneration affects both motor and sensory fibres alike.

Baginsky, A.: Post-Diphtherial Paralysis. (*British Medical Journal.* 1898. No. 1966.)

In a discussion on this subject, Prof. Baginsky said that his own observations had led him to believe that cases of post-diphtherial paralysis were now less common, though some bad cases might still occur. He had been interested to hear how early the intoxication by the diphtheria poison might begin in the body, and he thought that the observations recorded by Dr. Woodhead would throw light on the true nature and origin of the paralyses. His assistant, Dr. Katz, had examined the brain, spinal cord and peripheral nerves, and found advanced degenerative changes in all parts of the nervous system, both nerve cells and nerve fibres. Extreme degeneration of the muscle fibres of the heart and diaphragm was also found. In regard to post-diphtherial hemiplegia, he thought that cerebral embolism was the most usual cause. He had found this condition present

in three such cases examined, and thought that a distinction should be made between them and cases of real diphtherial paralysis. In his opinion, early antitoxin treatment was of the greatest value in diminishing the number of cases of paralysis in diphtheria.

Haushalter and Thiry: Spastic Paralysis in Children. (*Société de Biologie*, July, 1897; *Medical Chronicle.* 1898. Vol. x., No. 1.)

The authors describe two cases of general spastic paralysis in children, with the results of the autopsy. The first case was a girl of thirteen months old, at the time of her death, which was the result of broncho-pneumonia. Her mother had a difficult labor, which lasted twenty-one hours; the infant was born asphyxiated, and remained in this condition for three hours. Rigidity of the limbs was noted from the first months, but not convulsions. The infant was well nourished, but backward in intelligence; there was double internal strabismus, the arms were rigid in a position of semi-flexion, and were slightly movable; the legs were completely rigid and crossed, knee reflexes greatly exaggerated.

At the autopsy the meninges were adherent over the superior part of the Rolandic region, with excess of fibroid tissue coning lacunæ, which had been the seat of old blood extravasations. The nerve cells were seen to be wasted in the affected region. There was descending degeneration in the spinal cord. In this case there had been a bilateral meningeal hemorrhage in the Rolandic area during birth.

In the second case death occurred at three years of age, of broncho-pneumonia. Birth had been easy, but the mother had suffered much anxiety during pregnancy on account of the alcoholism of the father. The child was puny, and had never learned to talk. There was rigidity of the muscles of the trunk and neck, strabismus of the left eye, rigidity of both arms, complete rigidity of the legs, which were adducted and crossed.

At the autopsy, there was atrophy of the fronto-parietal, convolutions of both sides, and a shrivelled condition of the paracental lobule and occipital lobes. There was descending degeneration of the cord.

Finkelstein: Two Cases of Mania during Measles. (*Wratch.* 1898. No. 20. *American Journal of the Medical Sciences.* 1898. Vol. cxvi., No. 6.)

The author reports two cases of this rare complication of measles occurring in his service at the St. Nicholas Hospital.

A boy, aged thirteen years, was admitted on the twenty-eighth day after the onset of measles. The psychic disturbance had existed since the twenty-first day; it was characterized by furious delirium, with periods of extreme terror. At admission there were acceleration of cardiac activity, exaggeration of knee-jerks and enfeeblement of nutrition. Intellection was slow, but questions were answered when repeated several times. There were hallucinations of sight of a terrifying character (a black man); he made efforts to escape, fighting with his hands and uttering loud cries; sleep was agitated. This condition lasted for a week, and then gave place to gradual and complete recovery. The history showed that the father was an alcoholic, and that the child had been abandoned, and, finally, had been apprenticed in a shop where his life was very unhappy.

The second patient was a girl, aged fourteen years, who showed mental disturbance from the time of the invasion of the disease, six days before admission to the hospital. The parents denied any heredity. During the first two days, while at home, the girl was sad, and responded slowly to questions; the third day she showed signs of incoherence and hallucinatory confusion, manifested by dread of everything surrounding her. She cried out, threw away from her everything that came within her reach, and tried to run away.

On admission to the hospital there was extreme exaltation and activity, preventing satisfactory examination; she cried out, striking with her fists; she did not answer questions, and repeated only the single word "injustice." She ran about the ward and threw everything away from her. She was very pale, and when examination of the chest could be made the vesicular murmur in both lungs was noted to be very harsh. Two days later the agitation was less violent, and there was mental depression. Respiration was accelerated, and she seemed to have fever, but no thermometric record could be obtained. The next day the pharynx was observed to be reddened, and on the following day the eruption appeared. From this time on she became quieter, and two days later remained quietly in bed,

occasionally mumbling to herself and not replying to questions. The heart was weak. Pneumonia developed and, with increasing feebleness of circulation, terminated in death six days after the appearance of the rash. The mind never cleared. No autopsy was permitted.

Hirsch, William: The Pathological Anatomy of Amaurotic Family Idiocy. (*Boston Medical and Surgical Journal.* 1898. Vol. cxxix., No. 16.)

The author reported the case of a child first seen when ten months old who had died after being under observation one year. The autopsy was made four hours after death. The microscopic examination revealed changes in the nerve-cells of the entire central nervous system. Serial sections had been made through the spinal cord, the medulla oblongata, corpora quadrigemina, optic thalmus, caudate nucleus, cerebellum, and through the entire cortex of the brain and not a single normal cell was found. All the nerve-cells were enormously enlarged, the cell-body was swollen, and sometimes three times its normal size. The Nissl granules were dissolved into a pulverized mass. The nucleus with its nucleolus was displaced to the periphery of the body. The processes were very few in number and often broken off. There was degeneration of the pyramidal tracts in the spinal cord and medulla oblongata and atrophy of the optic nerves. The neuroglia and the blood-vessels were perfectly normal throughout the entire nervous system. The clinical evidence as well as the anatomical findings prove that the assumption that the disease consists of an arrest of development is erroneous, but that we have to deal with an acquired disease. The typical change in the nerve-cells and the fact that all the nerve-cells and nothing but the nerve-cells of the entire nervous system are affected, makes it very probable that we have to deal with a toxic condition, with a direct action of some poison on the nerve-cells.

Officer, David M.: Serum Diagnoses in Children. (*Medical Gazette.* 1898. Vol. xvii., No. 5.)

The author reports the results of 328 serum diagnoses in children which he had made during the past two seasons.

The serum has been used chiefly, as it was found that in many cases the reaction was obtained more quickly, the corpuscles not being present to get in the way of the agglutinating

bacilli, though when corpuscles are present the specimen is more easily focussed. Still, in using the serum, a few corpuscles are always present, so that this slight objection may be dismissed. For the purpose of collecting the serum, a special capillary tube was made, which has a larger diameter than the ordinary vaccine tube, large enough to allow of the serum separating well from the clot.

The blood from the puncture easily flows up this tube without any sucking being necessary, the puncture being made with aseptic precautions, for the patient's sake.

The serum, after separating, is allowed to drop out or is blown out of the tube on to a piece of clean glazed paper or perfectly clean glass, and then ten loopfuls of distilled water are placed at a little distance from the drop of serum. A loopful of the serum is then taken up, and well mixed with the distilled water, and then one loopful of the mixture is put on the coverslip, with a loopful of the young broth culture of typhoid bacilli, using the same-sized loop. These are well mixed, and then the slide (with the edges of the hanging drop excavation greased with vaseline) is lowered on to the coverslip; the two adhere. Then a note of the time of mixing is placed on the label, and the dilution, and then the specimen is examined. When a reaction occurs, the time that has elapsed is recorded on the label also. This method allows of great accuracy in measuring the dilution, as the same-sized loop is used for serum and broth culture, and this is important.

The dried-blood method, however, is of great value, on account of the ease with which the blood can be drawn and sent to a distance. The capillary tubes, however, have given great satisfaction in this fair-sized number of cases. The time limit adopted is thirty minutes, no notice being taken of any reaction which takes place after that time, and in practice it is found that, with a 1 to 10 dilution, very few typical or even doubtful cases take longer than that for a reaction to take place.

As to the day of disease in which one can get the reaction, the author has got it in two cases on the third day, and one on the second. This latter case is without doubt reliable, as the mother and her teacher declare that the child was playing about two days before the day on which the blood was drawn; but, doubtless, the disease was in actual existence longer than that. However, it was a mild case, only extending to the thirteenth

day. This case is a good example of how careful one ought to be with children going about, if there is a rise of temperature which cannot otherwise be explained. On the reaction she was admitted, and only on that, as the patient had on the day of admission a normal temperature, and four days had elapsed in the meantime before the author could examine the blood, so that the patient was presumably at about the sixth or seventh day when admitted.

In some of the cases there was no reaction at first on examining the serum, and, as a reaction is not often obtained till the sixth day, it has been his practice to take a negative reaction as meaning that whatever property typhoid blood developes which causes clumping is absent in a negative case, and consequently it has been his custom to allow full six days before examining again, as may be seen from the table of specimen cases, and always at the second test in a genuine case the author has succeeded in getting a positive reaction. It may be that four days or less would do, but that is a matter which experience alone must decide.

Regarding the usefulness of the test as a diagnostic agent, the following is a case in point. A child aged six years was ill ten days with pain in abdomen, which was not referred to any special locality of the abdomen. The patient was greatly distended, so much so that it was impossible to elicit dulness anywhere. The question, was it an appendicitis which had perforated or a typhoid which had gone wrong, was answered in the negative, as far as the latter was concerned, when her blood was submitted to Widal's test. On this result, a diagnosis of appendicitis was made, and an immediate operation performed, when it was found, as was expected, to be a septic peritonitis supervening on a perforated appendix, there being an unusual foreign body in that *cul-de-sac* in the shape of an ordinary pin.

One point to which the author calls especial attention was the way in which the reaction declines in some of those very mild cases of typhoid which can only be diagnosed by the reaction. The reaction in severe or well-marked cases has been known to persist, even within the half-hour time limit, for a considerable time after, and of course this question always will arise when a reaction is obtained: Is it the present disease, or something which has been present in the past? And it is here that the negative result rises to the position of the first import-

ance, as, for instance, in obscure cases where the diagnosis lies between typhoid, and, perhaps, meningitis, pyosalpinx (in adults), or appendicitis.

The following table gives the percentages of typhoids and "febriculas" which responded to the test, and a list of diseases which did not react.

Year.	Cases Examined.	Reacted.	Percentage of Reactions.
1896–97	Typhoids . . . 79	75	95.2
	"Febriculas" . . 25	22	88
1897–98	Typhoids . . . 162	156	96.3
	"Febriculas" . . 30	26	86.6

Diseases which did not react:—Dysentery, hydatid of liver, influenza, endocarditis, pneumonia, septic enteritis, phthisis, gastroenteritis, bronchial catarrh, tub. meningitis, infantile paralysis, appendicitis, acute colitis.

Koenig, W.: The Causation of Cerebral Infantile Paralysis. (*Deutsche Zeitschrift für Nervenheilkunde.* Bd. xiii., S. 181. *Scottish Medical Journal.* 1898. Vol. iii., No. 5.)

At the close of a careful paper on this subject, the author sums up the results of his investigations as follows:

1. The only three exciting causes of infantile cerebral paralysis which are known are (*a*) difficult labors, or those which result in asphyxia; (*b*) head-injuries; (*c*) infectious diseases.

2. All the other etiological factors which are found are, in the present state of our knowledge, to be looked upon either as predisposing causes or as merely indications of the presence of a predisposition. It cannot, however, be denied that, occasionally, one or other of these cases may possibly also be an exciting cause.

3. Difficult labors, or those followed by asphyxia, and also head-injuries may occasionally act as predisposing causes.

4. In cases with obvious exciting causes, predisposing influences are also very often found. Whether, and to what extent this is the rule, must be settled by further investigations.

5. In a majority of the cases in which there is no obvious exciting cause, several predisposing causes can be proved to exist, provided a careful clinical history is obtained; and Freud

is quite right when he draws attention to the frequent concurrence of several of such causal factors.

6. Traumatic cerebral infantile paralysis cannot in the meantime be placed in a separate category.

7. Neurotic heredity and intemperance on the part of the father deserve a tolerably prominent position among the predisposing causes.

8. Still greater significance is to be attached to the presence of a family cachexia.

9. A phthisical family history is especially noteworthy.

10. On the other hand, the occurrence of syphilis in the parents is not proved to have any appreciable influence on the occurrence of cerebral infantile paralysis.

Thiry, Charles: General Paralysis of the Insane in Early Life. (*Thèse de Nancy.* 1898. *Scottish Medical Journal.* 1898. Vol. iii., No. 5.)

From a study of sixty-nine published cases of general paralysis, in patients from eight to twenty years old, the author draws the following conclusions:

The disease, when it occurs in early life, gives rise to the same symptoms as in the adult, but there are certain peculiarities. The mental condition which characterizes the juvenile cases is one of simple dementia, and delusions are very rare. On the other hand, the bodily signs are especially prominent, and fits, congestive seizures, and spinal symptoms are common. As in these cases the disease sets in during the period of growth, it naturally arrests the physical development and also suppresses, or prevents, the signs of puberty.

The progress of the disease is similar to that in adults, with this difference, that in children periods of remission never occur. There is no special tendency for the disease to begin exactly at puberty, and the two sexes are equally affected.

In considering the etiology, many predisposing causes which are important in adult life (such as overwork, grief, intemperance, etc.) have to be put out of account; and there remain only two powerful factors, namely, an "arthritic," nervous or insane heredity, and syphilis, especially the congenital form.

The cerebral lesions are identical in every respect with those in the adult.

In the diagnosis it is important not to confound general

paralysis in early life with the symptomatic dementia which results from some chronic intracranial lesions (such as tumors, gummata and chronic meningitis). This mistake will be avoided if investigation is made into the physical and mental symptoms, and especially into the way in which they develop and into their further course.

HYGIENE AND THERAPEUTICS.

Jacobi, A.: Care of the Newly-Born. (*Philadelphia Medical Journal.* 1898. Vol. ii., No. 24.)

In discussing the subject of preventives, the author refers to asphyxia of the newly-born. Anybody can be taught the following things, he says:

In regard to asphyxia of the newly-born, that it may lead to convulsions, paralysis, epilepsy, or idiocy; and that it should be prevented, or shortened, by all possible means; that unless there is a vital indication to assist the mother, the baby should be attended to first; and that the necessary means of resuscitation should be resorted to immediately. Any intelligent person can be taught to alternate a warm bath with a cold plunge, or the affusion of cold water, the raising of the head from the soiled bedding, the beating of the nates, tickling the fauces, the momentary inhalation of ammonia; the ligature of the cord when the pulse begins to flag, or instantaneously when deep asphyxia requires measures that cannot be taken while the baby is in contact with the mother; also the method of artificial respiration of Silvester or of Laborde. Any intelligent woman may also learn that she should avoid blowing into the mouth or nares of an asphyctic baby. The woman can also be taught and be compelled to leave alone a hydrocele, a hematoma of the scalp or of the sternocleidomastoid muscle; a milk-induration of the infant's mamma with the exception of the very gentlest massage; and the usual form of afebrile jaundice. She can learn to treat the cord without fat or oil. She can learn that the mucous membrane of the mouth, and particularly that of the alveolar processes, is very thin, so that a mere screaming spell renders its posterior part anæmic and tense during the traction of the pterygoid muscle alone; that the slightest pressure by the hand or a coarse cloth during the washing or other cleaning of the mouth may cause ulceration that heals slowly and opens the

gates of infection in the buccal cavity to the aphthæ of Bednar at least; to the same extent and in the same way that harm is done later on by inconsiderate lancing of the gums, which is known not only to injure the tooth, and to alter the gums, but also to furnish opportunities for septic invasions. These are simple things at present. A few years ago they were revelations to us; still they are so simple that they are understood by the plainest mind.

Howe, Lucien: Why Should the Eyes of Children in the Public Schools be Examined? (*Buffalo Medical Journal.* 1899. Vol. lix., No. 7.)

About thirty years ago and more, when the continent of Europe was mobilizing into one vast camp, the conscripting officers found that large numbers of young men were escaping military duty because they were too shortsighted to see the target at the required distance. More systematic investigations were then undertaken to ascertain the causes, and it required but a short time to find that much of the nearsightedness could be traced to school life. These investigations were pushed then in Germany, France, England and elsewhere and the subject was taken up in this country by Agnew and others.

The results showed that about the same condition prevailed in Buffalo and other American cities as had been found elsewhere, the same causes here—defective school furniture and bad light—producing its quota of imperfect vision at the time and the promise of serious disturbances in the future. It was found, for example, that in the primary classes the percentage was exceedingly small of those nearsighted, or who had eyes otherwise imperfect, but that this percentage increased in almost constant ratio with the advancing school years, so that by the time these young men and women were graduated from the High School, 19.7 per cent. were nearsighted or had eyes otherwise defective. In other words, it was impossible to have five children finish the prescribed course without sending one of them out with imperfect vision.

In a slight degree, nearsightedness is simply an inconvenience easily corrected by glasses, but in the progressive form, or the variety known as malignant myopia, it forms one of the most difficult and dangerous maladies which we are called to treat. But if stooping causes nearsightedness, we naturally ask why the pupil does this and how it can be avoided?

We find the reason for his stooping is:

(*a*) An ill-adjusted desk and seat. The desk must be at a suitable distance from the seat, and the seat of a certain height, preferably the same as the height of the knee. In this way the pupil is enabled to sit upright.

(*b*) The light may be imperfect, requiring the pupil to approach his head to the book, or

(*c*) The light may come from the wrong direction—from the right side, causing the hand to shade what is being written.

A second danger from school-life to the eyes is that if any imperfection in vision already exists, this tendency is increased by the strain which the present school routine demands. Thus, if there exists a tendency to astigmatism, to amblyopia from strabismus, or any similar disease, this is apt to be aggravated if it passes without correction in early life.

Contagious diseases of the eyes are frequently propagated in schools—very rapidly, of course, in those school houses where, with utter disregard of hygiene, roller towels are still allowed, and also from the contact which children have with each other.

In closing the paper the author summarizes as follows:

1. That the attention of the superintendents of education in Buffalo and other towns should be called to the advisability of examining the eyes of pupils in the public schools as often as once a year, and that this be done by the teachers in the manner indicated by the State Board of Health.

2. That the society to which he was speaking should express its sense of the necessity of adding to the Board of Health another physician, who shall not engage in private practice, but who shall give his entire attention to the sanitary condition of the schools and to preserving the health and eye-sight of our seventy odd thousand pupils.

If these two recommendations could be adopted, it is certain that the next generation would suffer less and have better vision than the present one.

Upson, Henry S.: The Medical Treatment of Epilepsy. (*Cleveland Medical Journal.* 1898. No. 10.)

While the bromides still occupy the foremost place in the treatment of epilepsy, attention has been called during recent years to the value of trional in this class of cases. This drug

was first successfully employed, for this purpose, in Weir Mitchell's Clinic, in Philadelphia. The author states that in his experience, aside from the bromides, trional is the best of the few drugs which deserve mention. If for any reason bromides cannot be given, trional may be used in three or four grain doses, three or four times daily, the amount being reduced if the patient becomes too sleepy. He has seen attacks stopped altogether under its use for many months, and has never noted any bad symptoms during its continued employment. It has great advantages in not disturbing the stomach, and causing no eruption. The author considers it possible that in still larger doses it may be more efficacious. It may be combined with the bromides, especially the bromide of strontium. One patient on whose stomach the bromide had a somewhat disastrous effect, had recently done very well on three grains of trional, three times a day by the mouth, and eighty grains of bromide of potassium, every other day by the rectum.

Fisch, C.: The Assimulation of Diphtheria Antitoxin. (*New York Medical Journal.* 1898. Vol. lxvii., No. 15.)

The author reports a series of experiments made to determine the value of diphtheria antitoxin administered by the stomach. His observations seem to have established that while after twenty-four or thirty-six hours nearly the whole amount of antitoxin can be recovered from the blood, when the antitoxin has been taken by the mouth, after five, six, nine and eleven hours, nothing or very little of it can be found. His experiments, of course, would not exclude the possibility that at these hours some antitoxin was present; on the contrary, that is very probable; but its amount certainly was small and not sufficient to protect animals against even very small doses of the specific poison.

It seems that his experiments tend to corroborate the theory of the chemical nature of antitoxin, and show that with perfect safety immunization against diphtheria may be produced by oral administration of the antitoxic serum or the antitoxic milk. In the case of children the latter seems preferable. On the other hand they emphasize the fact that curative effects must not be attempted by this way of administration on account of the slowness of absorption, or at least of diffusion through the system; even for prophylactic purposes it must be employed only with careful discrimination of the conditions.

For speculative minds it would be a promising task to find out why it takes so long for this substance to be diffused through the body, while almost all other absorbable chemical bodies, when in contact with the intestinal mucous membrane, assert their presence in the circulation much earlier.

Editorial: The Treatment of Whooping-Cough by the Inhalation of Medicated Oxygen. (*New York Medical Journal.* 1898. Vol. lxviii., No. 19.)

In a thesis presented to the University of Paris, and quoted in the *Gazette hebdomadaire de médecine et de chirurgie*, Dr. M. Lacroix gives the results of his experience in the treatment of twenty-five cases of pertussis by inhalations of oxygen medicated with certain antispasmodics. The substances used were bromoform, bromide of camphor, and cherry-laurel water. The apparatus employed consisted of a bag containing the oxygen to which is attached a rubber tube conducting the gas into a reservoir, which he calls the saturator. This reservoir contains pieces of pumice stone which are saturated with the medicaments to be used. From the reservoir is an outlet tube furnished with a bone mouthpiece. The pumice stone is placed in a glass and is saturated little by little with the medicaments, the whole being stirred the while with a glass rod. It is then replaced in the saturator, and at each sitting a pinch of bromide of camphor is added. When the stone fills the apparatus a tampon of absorbent wool, slightly compressed, and intended to stop the aspiration of particles of pumice or bromide of camphor, is placed on top. When bromoform is used, it is previously dissolved in the cherry-laurel water. Dr. Lacroix uses ten grammes of each, but the quantity used may be varied according to circumstances.

The mouthpiece is placed in the patient's mouth, and a slight pressure of the oxygen bag sends the gas through the saturator, and the gas thus becomes impregnated with the vapors. The taste of the mixture is said to be slightly disagreeable, but is nevertheless well tolerated by children. M. Coyon has treated at the Hôpital Trousseau over a hundred cases in this manner, without observing any pronounced dislike on the part of the patients. Dr. Dutremblay, on the other hand, finds a mask more convenient, and that method could be employed if the child refused to submit to treatment. The saturator needs renewal about every four or five days.

About forty-eight quarts of oxygen are used daily in four inhalations: *viz.*, twelve each time, about 8 A.M., midday, 4 P.M., and 8 P.M. The treatment is given without regard to either the access or the time of feeding. Dr. Dutremblay, however, divides the doses, and gives a few quarts of inhalation after each access, and this method would probably be advisable in private practice.

The advantages alleged for this treatment by Dr. Lacroix are:

1. It modifies the accesses of cough, diminishing them both in number and intensity.

2. It obviates complications, such as broncho-pneumonia, hernia, prolapse of the rectum, epistaxis, vomiting, constipation, fœtid stools, etc.

3. It strengthens the organism, relieving the general condition, and placing the organism in good form to resist the invasion of infectious diseases so frequent after whooping-cough.

The method seems to commend itself as rational, not difficult of application, and well worthy of a trial in this obstinate and distressing malady.

Schirmer, Gustav: Inunctions of Unguentum Credé in Epidemic Cerebro-Spinal Meningitis. (*New Yorker Medicinische Monatsschrift.* 1898. Vol. x., No. 11.)

Inunctions with the unguentum credé gave such satisfactory results in nine cases occurring during the severe epidemic of cerebro-spinal meningitis that occurred in the spring of 1898, that the author reports numerous cases in detail.

E. B., eleven years old, after having been sick for ten hours the patient's symptoms were very severe. The use of the ointment was begun and the report of the mother on the next day was favorable. After each inunction the patient had become quieter. The violent vomiting was combatted with carbonated waters mixed with lime water, and the entire withholding of nourishment of any kind. In fourteen days the patient was well.

H. H., four and one-half years old. The patient had already been treated by others for four days, and presented a typical picture of a cerebro-spinal meningitis. There were crossed paralysis of the arm and leg, strabismus and ecchymoses upon the hands. The temperature rose on some days to 106° F.,

there were marked swellings of the right wrist and left elbow joints, involuntary evacuation of the urine, and offensive alvine discharges. The severer symptoms remitted after about four days, and in twelve days they had disappeared. The appetite became good. During the next ten weeks the patient's condition varied. Violent headaches awakened her from her sleep. Her emaciation became excessive. Ninety grammes (3 ounces) of the salve were used altogether. After three and one-half months her father reported her complete recovery.

E. E., eight and one-half years old. This case was noticeable on account of the excessive rigidity of the muscles of the neck; the head was held almost at right angles to the spinal column. The patient improved very rapidly, though she had frequent relapses during the nine weeks that the sickness lasted. In all 60 grammes (2 ounces) of the ointment were used. The patient made a good recovery.

A. K., aged six years. An indubitable case of cerebro-spinal meningitis. Rapid improvement. Fourteen days later two younger members of the family fell sick with convulsions, were treated by some one else, and died in three days. Six weeks afterwards the patient was still emaciated and weak, but, according to her mother's statement, quite well.

H. M., eight years old. Distinct rigidity of the muscles of the back of the neck; temperature 105° F.; violent vomiting. The patient had only been ill for a few hours. In spite of his violent struggles against it, cleansing of the nasal cavities, from which there came for ten days a yellowish, blood-stained secretion, was effected. The patient was cared for by a trained nurse, 60 grammes (2 ounces) of ointment being employed. In this case the relapses sometimes only lasted one day.

O. F., twelve years old. Defervescence of the fever after ten days, the patient feeling well. Then a sudden increase of the temperature to 104° F. Complete recovery after four weeks.

Three other cases ran courses similar to the last one.

The cases that were treated at once with the inunctions recovered quickly and without any serious disabilities. Even those first treated later, however, and which were certainly severe cases, got well. In no case was there any defect of the organs of sense left behind.

The author's method of treatment was as follows:

1. Inunctions of 30 grammes (1 ounce) of unguentum

credé daily for three days, and a further 10 grammes (⅓ ounce) at each relapse.

2. Very hot water applications to the spinal column when there was great pain.

3. Antiseptic cleansing of the nasal cavities, as soon as the general condition of the patient permitted it to be undertaken.

4. Small doses of trional when there was great restlessness.

Moncline, Cesare: Malaria and its Treatment. (*American Gynecological and Obstetrical Journal.* 1898. Vol. xiii., No. 5.)

The author reports the case of a child aged 5 years, had had malaria for twelve months, rebellious to all salts of quinine administered by mouth and hypodermic injections. The child had an enormous splenic tumor, was anæmic and malnourished. The first day the author gave a dose of gms. 0.75 in two doses of hydrochlorate phenocoll with no result. He repeated them for three days more without any result. He then administered gm. 1 of the same salt in eight doses daily. A very sensible amelioration commenced to be shown after the first administration. The same daily dose was repeated for six days more. The paroxysms stopped. The boy was treated also for his depressed general condition, and recovered rapidly.

SURGERY.

Little, Muirhead: Coxa vara. (*British Medical Journal.* 1898. No. 1975.)

The following conclusions may be drawn from a study of this paper:

1. Coxa vara in adolescents may be produced by the action of gravity on bones softened by any disease.

2. In children it is due, when present, to rickets.

3. Some cases of apparent coxa vara are cases of curvature of the upper part of the diaphysis of the femur.

4. Others are cases of dislocation of the hip.

5. Others of greenstick fracture of the cervix femoris.

6. Roentgen's rays afford the surest means of diagnosis that we at present possess, and should always be employed.

7. Subtrochanteric osteotomy is the best treatment to adopt in true coxa vara or in curvature of the shaft simulating this con-

dition. If, however, the case be seen before the bones have hardened, weight extension should be used.

McGuire, Edward: Acute Appendicitis in Children. (*Virginia Medical Semi-Monthly*. 1898. Vol. iii., No. 14.)

The author reports 9 cases of this disease in children ranging in age from four to eleven years. Appendicitis in children, before the age of four years, is very rare. One case so young as seven weeks is reported by Deeme. Matterstock and Fitz each report a case at twenty months. Fowler operated successfully on one of twenty-three months. After the fourth year, it is a very frequent occurrence through childhood, but especially so after the tenth year. Of 104 cases, 3 were under three years, 47 between the fourth and ninth years, and 54 between the tenth and fourteenth years.

The influence of sex on appendicitis holds good in children as in adult life; of 101 collected cases under fifteen years, 72 were males and 29 females. Fowler states from his experience of all cases seen, the proportion of males and females was about the same.

The natural death-rate in children, from appendicitis, is higher than in the adult, and varies according to different authors, from 25 to 45 per cent. The author is sure these statistics are too high. A great many cases that end in resolution are overlooked; or, if diagnosticated, are called acute indigestion, colic, "bilious attack," etc. This error in diagnosis was especially frequent previous to the last five years. In the incipiency, the symptoms are identical with those of acute indigestion, perhaps so for the first twelve or twenty-four hours, and we are all aware of the magnitude, the variety, and the numerous symptoms this little condition may produce. That the symptoms are ephemeral in character, is an important point in the diagnosis.

Holt, in his work on Children, states that of 112 cases, there were 62 recoveries and 50 deaths—a mortality of 45 per cent. In 43 fatal cases, nearly all died of general peritonitis. Six died in the first three days; 19 from the fourth to the seventh day; 13 in the second week, and 5 in the third week. He also affirms that recurrence is not so frequent in children as in adults —it being noted in only two cases of this series. The younger the child the greater the danger.

Mattenstock reports that out of 12 patients below the age of six, 11 died. Between the ages of six and ten, the prognosis is more favorable—24 cases, 15 deaths.

The intensity of an individual symptom is more marked in children than in adults, but these individual symptoms are as easily misleading in some cases. This is probably due to the greater impressibility of the general and nervous systems of childhood, and to the lack of proper discriminating powers to analyze the symptoms. The physician who looks and waits for the typical symptoms of appendicitis will frequently be disappointed and make an error in diagnosis. The diagnosis in typical cases is based upon—1st. The suddenness of the attack; 2d. The presence of abdominal pain; 3d. Tenderness and muscular rigidity in the right iliac region; 4th. Some nausea attending and following the pain, and in a large number of cases some febrile disturbance.

The first condition is applicable to nearly all abdominal troubles. The second condition—or abdominal pain—is more variable. In the majority of cases, it is referred to the umbilical region, or epigastrium; afterwards, it becomes more centred in the right iliac region. Pain is a very variable symptom as to its location and intensity. It may be referred to any portion of the abdominal cavity—to the chest or to the lumbar region—on account of the extensive distribution of the abdominal sympathetic system. Another reason why its location is variable is that the position of the appendix is not constant. It may lie to the inner side, to the outer side, or behind the cæcum. It may be directed downward to the right iliac fossa, or upward to the right kidney behind the liver, or may extend across the abdominal cavity.

Pain is variable and misleading. It may be violent, or may be so slight as not to deter the child from playing. It does not indicate the pathological conditions present. It may be intense in a case of slight catarrhal appendicitis, and absent in a gangrenous appendix. The author reports a case in which a boy was skating at eleven o'clock the night before, was operated on the next morning, and a perforated appendix and an abscess holding three ounces of pus with extensive adhesions were found. Local tenderness in the right iliac fossa is almost a pathognomonic of appendicitis, as is the rusty sputa of pneumonia. At first, the area of tendency may be large, but soon becomes

more centred, corresponding to McBurney's point. This is not by any means constant. It varies with the position of the appendix. Again, tenderness may be entirely absent. A case, with complete gangrene of the appendix may be free from pain and tenderness, because it is dead, nerves and all.

Muscular rigidity is usually present, but it is not equally prominent in all cases. This rigidity is more marked on the right side, and, in the majority of cases, lessens or disappears in a day or so. The prominence of this symptom seems to have some relation to the proximity of the inflamed appendix to the anterior abdominal wall. Care should be taken not to mistake rigidity of the muscles for a tumor. Anæsthesia is a valuable aid, especially with children, in this examination. As it disappears in about two-thirds of the cases, a tumor, with or without pus accumulation, is frequently found in the right iliac fossa, formed from either the plastic exudate, or agglutination of the omentum and intestines. It varies in size and position.

Nausea is usually a more prominent symptom in childhood than in the adult. It is not continuous. The acuteness of nausea occurring later in the disease often marks the advent of perforation and onset of septic peritonitis.

Fever is nearly always present in the earlier stage of the disease, and is higher then than later. It does not indicate the seriousness of the condition. A slight catarrhal appendicitis may produce a temperature of 104° F. Again, it may be absent or subnormal in the more serious forms.

The pulse is a far better indication of the gravity of the disease than the temperature, though both may be normal in a gangrenous appendix, when the toxins are not escaping into the system. The facial expression in the milder cases, and even in many of those when localized suppuration occurs, is not marked on account of a protective appendicitis. The toxins are not, or, if so, are slowly absorbed. In the severe conditions, when there is a gangrenous appendix, and the toxins are being rapidly formed and absorbed, as in the fulminating form with septic peritonitis, the face is often the greatest indication of the condition. There is one potent fact, and it should have great weight in dealing with the diagnosis in children. It is that an acute peritonitis very rarely ever occurs in childhood from any other cause than appendicitis. The same holds good in the adult male. It is therefore right to indite the appendix in all

peritoneal inflammations, unless other determining causes are well established.

Still, G. N.: Movable Kidney in Children. (*British Medical Journal*. 1898. No. 1972.)

The author reports two cases of movable kidney in infants; one recognized during life in which the right kidney was freely movable, and could be pushed up under the lower margin of the liver and downwards on to the brim of the pelvis. The other case was found accidentally *post mortem*, the right kidney being easily pushed about an inch or more upwards or downwards under the peritoneum. In neither of these cases were there any clinical symptoms which could be attributed to the renal condition. In the former case the child was fat and well nourished, and there could be no question of any laxity of tissues produced by wasting as suggested by Dr. Jules Comby. It was not very rare to find a slight degree of mobility of the kidney *post mortem*, and probably, if one examined all cases specially for this condition, one would find it more frequently during life. It seemed almost certain from the early age of some of the cases recorded that the mobility of the kidneys was congenital.

Fisher, Theodore: Movable Kidney in Children. (*British Medical Journal*. 1898. No. 1972.)

The author reports a case of misplaced kidney, occurring in an infant aged eighteen months, which he had seen in the *post mortem* room. There had been great distension of the abdomen, rotating the liver so far backwards that its posterior surface rested upon the iliac crest. The right kidney had been displaced downwards by this rotation of the liver, and rested in the iliac fossa.

Morgan, J. H.: Tumors of the Kidney in Childhood. (*Medical Press and Circular*. 1898. Vol. cxvi. No. 9. *Medico-Surgical Bulletin*. 1898. Vol. xii. No. 16.)

The author in his recent Lethsomian lectures, declares that tumors of the kidney in childhood are almost without exception malignant, most of them sarcomatous, though a few bear affinities to the adenomata, and in rare cases show pigmentation. These originate from the cortex and invade the gland or the perirenal tissue. Very rarely they commence in the adrenals. By pressure the tumor may cause hydronephrosis and adhesions, or œdema of the lower extremities or ascites. They are fre-

quently bilateral, and neither traumatism nor antecedent disease has much to do with their origin. So rapid is the growth of these neoplasms that they present only two symptoms in their earliest onset, viz., that of a large rounded tumor commencing in the loin, and hæmaturia. The nature of the swelling is soon evidenced by the rapidity of its increase, and the hæmaturia is intermittent, the urine in the intervals being clear. Clots may form in the bladder or ureter, when pain may be superadded. Cachexia does not appear until late, but is then rapid. The conditions are few which give rise to any difficulty in distinguishing between these tumors and those of neighboring parts. Malignant disease of the suprarenals is rare, and the origin of such growths may be indicated by pigmentation of the skin, and an abnormal growth of hair about the pubes and other parts of the body. If operation be resolved upon the older the patient and the smaller the tumor the greater the chance of success.

Morgan, John H.: Tumors of the Kidney in Children. (*The Lancet.* 1898. No. 3887.)

The tumors of the kidney in childhood are almost, without exception, malignant, and the great majority are of the nature of sarcomata, though a few bear affinities to the adenomata, and in rare instances show pigmentation. They are by far the most frequent of all malignant tumors occurring in the abdomen in childhood, and originate either from the cortex and invade the gland or in the perirenal tissue. Very rarely they commence in the adrenals, sometimes surrounding, sometimes infiltrating, the whole of the kidney. By pressure the tumor may cause hydronephrosis, and adhesions may be found to other structures. The pressure effects may cause ascites or œdema of the lower extremities. They are frequently bilateral. Neither traumatism nor antecedent disease has much to do with their origin.

Occurring for the most part in very early life, and confined at first to one side of the abdomen, they present a smooth, rounded outline as distinguished from the sharp edge of an enlarged liver or the notched surface of an hypertrophied spleen. On bimanual examination they are found to be movable but attached to the neighborhood of the lumbar spine. They grow forwards and do not bulge in the lumbar region. Though dull on percussion, except where crossed by intestine, they are often so soft as to give an obscure sense of fluctuation, and

have thus been mistaken for ovarian cysts. They are invariably crossed by a portion of the colon, and in an early stage are influenced by the movements of respiration. There is generally a space into which the fingers can be pressed between the upper margin of the renal growth and the ribs.

So rapid is usually the advance of these neoplasms that they present only two symptoms in their earliest onset: *viz.*, that of a large, rounded tumor commencing in the loin, which most often is the first indication, and hæmaturia. In 12 per cent. this latter is said to be the primary symptom. Both might well, in the earliest onset, be mistaken as due to hydronephrosis or the presence of calculi in the pelvis of the kidney. But the nature of the swelling is soon evidenced by the rapidity of its increase, and the hæmaturia differs from that resulting from calculous or scrofulous pyelitis in its abundance and its intermittence, the urine in the intervals being clear. It may be so abundant as to form clots in the bladder or ureter, when pain will occur as an additional symptom. If hæmaturia occur without an assignable cause the patient should be strictly watched for several weeks. By this means Israel found a growth very early and removed it successfully. Cachexia does not appear until late, and then the wasting is rapid and the effects of pressure become evident in dyspnœa, vomiting and indigestion.

Russel, R. H.: Inguinal Hernia in Childhood. (*Intercolonial Medical Journal of Australia.* 1898. No. 8. *International Medical Journal.* 1898. Vol. vii., No. 12.)

The author discusses the causation and treatment of this condition as it occurs in children, and advances some radically new theories, and states that he has been entirely successful with no mortality in twenty-nine cases in which he operated and has had no recurrences. Basing his theory on the anatomical construction of the inguinal canal, he believes hernia is prevented by the sphincteric action of the muscles that cover the canal which is aroused when any effort is made that would expel the intestines into the canal. He also holds that the viscera only succeed in entering it when a funicular pouch of peritoneum persists and renders the way easy and prevention difficult. The sole object in treatment is the removal of this sac; when this is once accomplished the hernia will not return at least he has seen no recurrence. He believes that the so-called cures by

trusses are not absolute, though the hernia may never again come down. He advises the radical operation by the simple removal of the sac in all cases of children, believing they are far safer after it, that it is shorter in curing, and that the cure is more permanent and sure than that procured by a truss.

Richards, George L.: Earache in Children. (*Boston Medical and Surgical Journal*. 1898. Vol. cxxxix., No. 4.)

The author first considers disease of the external ear, including furuncle. For this affection he is in the habit of using a remedy which he says has the merit of being always easily obtained and of invariably giving relief, never doing any harm, and of being applicable at any stage of the inflammation. This is a 5 per cent. solution of carbolic acid in pure glycerine. The carbolic acid produces anæsthesia and eases the pain, while the glycerine, on account of its affinity for water, rapidly removes the serum from the part, and the swelling, heat and tension subside. As the heat and tension are often the things most complained of, the relief afforded is very great. The carbol-glycerine is applied on a small wad of cotton so rolled as to go as deeply into the canal as possible, and changed every two to four hours. Once the patient has been shown how he can do this by the doctor, he will readily make the changes himself.

Suppose this does not wholly relieve, and it becomes necessary to incise the furuncle or any part of the swollen canal? Do not attempt to do it without an anæsthetic, unless you have a specially tractable patient, or the result will be unsatisfactory to both. The region is so tender that it is practically impossible for any one to hold still. Give a little chloroform or ether to primary anæsthesia, and then with a suitable knife make an incision long enough and deep enough to go through all the tissue it is desired to open. The bleeding will doubtless be profuse, but will relieve rather than otherwise. Do not be disappointed if no pus comes; with an opening deep enough, the pus, if there is any in the vicinity, will find its way out. Apply the carbolic-acid-glycerine compound as before, and soon the patient is well.

He next considers earache caused by inflammation of the middle ear, which presents the following clinical picture: Inflammation with fluid formation in a small bony walled cavity, capable of extension to the important structures in the neighborhood, and with the ever-present danger of injury to the hearing,

characterized by pain of a severe lancinating character. What is to be done in the way of treatment? How best prevent injury to the drum and delicate structures, and how best preserve the hearing from present and future damage? First, the pain must be relieved. That the efforts of physicians in this direction have not been always crowned with success is proven by the large number of remedies suggested by various authors. Even the distinguished Politzer, in the last edition of his text-book, suggests all of the following as appropriate remedies in acute otitis media (acute earache):

1. Acetate of morphia, 0.2 in olive oil 10, applied as drops to the affected ear.

2. Oil of hyoscyamus, 2½ drachms; aqueous extract opium, 12 grains; as ear drops.

3. Opium salve, externally to mastoid and along canal.

4. Olive oil and chloroform, equal parts as ear drops.

5. Aqueous extract of opium and water, equal parts, put in the ear.

6. 10 per cent. carbolized glycerine.

7. 5 per cent. cocaine in the nose, so as to reach the Eustachian tube, opening and influencing the ear from this direction.

8. Warm poultices to the whole aural region.

9. Tincture of opium and water in varying proportions, in the ear as drops.

10. Cover the whole head with hot, moist cloths.

11. Anodynes internally.

12. Leeches in front and behind the ear.

To these may be added the following taken from other sources:

Cocaine, 5-10 per cent. solution in the canal.

Cold about the ear, hot applications in the ear.

Covering the ear with dry cotton.

Hot-water bottle.

Air douche, with Politzer bag; but this only when acute symptoms have subsided. If well borne it can be used, but if it causes pain it is contraindicated.

Dr. Whitney, of New Bedford, reports very good results from the application directly in the ear of a few drops of the following: Olive oil, 10 drachms; chloroform, 1 drachm. This, he says, does not hurt when first put in, and quickly relieves.

To be repeated as needed. From his own experience the author has the following to suggest as having given fairly good results: Tincture of opium, or more preferably the fluid extract, 1 ounce; with atropia, 4 grains; mix. An equal quantity of this added to an equal quantity of hot water, and the external canal filled with this as hot as can be borne; the ear stoppered with a small pledget of cotton, and the hot-water bottle applied to the ear.

The ordinary hypodermic tablet (morphia, $\frac{1}{6}$ of a grain; atropia, $\frac{1}{150}$ of a grain) dissolved in some hot water answers the same purpose, and has the advantage of being always at hand. Five per cent. carbolized glycerine, used as for furuncle, is often very efficacious, and has served me well, being continued after perforation has taken place or paracentesis has been done.

In searching for the causes of an earache the intimate relation between the nerve supply of the ear and the teeth must not be lost sight of, nor the clinical fact that some cases of earache are dependent on dental irritation. Conversely, toothache is sometimes relieved by remedies applied to the ear, especially those remedies containing chloroform. Grip is a very common cause, a large number of the acute serious inflammations having their origin in this disease. It is much less serious in its sequalæ than the ear troubles incident to the exanthemata, having less tendency to eventuate in prolonged suppuration. Here, however, the liability of the ear to trouble should be borne in mind.

Erdmann, John M.: Intestinal Obstruction, due to Intussusception. (*The Medical News*. 1898. Vol. lxxxii., No. 26).

The author reports seven cases of intussusception occurring in his own practice. He believes that the condition is more common than most authors admit. He classifies them according to their intensity after the manner of Raffinesque, as *ultra-acute*, death occurring in twenty-four hours; *acute*, terminating within the first seven days; *sub-acute*, lasting from two to four weeks, and *chronic*, lasting for three weeks to months before a fatal determination.

Intussusception is the cause of fully 30 per cent. of all cases of acute obstruction. The greatest proportion of cases of intussusception, fully 50 per cent. occur in children under ten years of age, and of these more than 50 per cent. occur in infants under twelve months. Between the ages of five and forty to

fifty the number of cases diminish, and after forty or fifty the frequency of occurrence is again noted. This condition may be explained upon the grounds of periods of debility, occurring in infancy and extreme adult age.

Anatomically the following varieties of intussusception will answer : The *ileocecal*, in which the ileocecal valve forms the apex of the intussusception; *ileocolic*, in which it is made up of ileum and cecum passing into the colon, and the *ideal* or *enteric* variety made up entirely of small intestine. Of these the enteric is the most frequent. Very frequently upon autopsy intussusception is found that is due to *post mortem* changes and not to any condition existing before the death of the patient. These cases can readily be excluded by their previous history.

The causative factors of intussusception are variously ascribed to former conditions of health or preceding physical conditions; conditions causing diarrhœa; factors of a pathologic origin, and factors that originate in the anatomy of the intestine. Factors of an anatomic origin include long and lax mesentery, although the author has been unable to demonstrate the existence of such an anatomical condition in any of his cases. Another of the anatomic causes and the one receiving greatest weight is the musculature of the intestinal coats. These muscle-fibres, the longitudinal ones primarily and the circular secondarily, produce the intussusception through irregular peristalsis in the following manner: Contraction of the longitudinal fibres occurs with a retraction of a portion of the gut from below into the part undergoing the irregular peristalsis; after a time contraction occurs in the circular fibres when a grasping of the intussusception takes place, which may and frequently does continue to such a degree as to produce strangulation. It is this contraction of the circular fibres that prevents the reduction of the mass in the irreducible non-strangulated and gangrenous types.

Among the pathologic causes are tumors, usually of the internal coats, which by their weight produce the irregular peristalsis. These are chiefly polypi and endotheliomata; also imperfections in the intestines, as Meckel's diverticulæ. Former conditions of health, barring a process which is accompanied by diarrhœa or by a pathologic condition of the intestines, apparently cannot be considered as factors of any great importance, except in patients in whom debility is well marked, these having less

resisting power to intestinal diseases. It would seem to the author that all conditions and factors which tend to produce diarrhœa and vomiting are primarily the cause of the irregular peristalsis, excluding, of course, those cases classed as distinctly pathologic in origin, and these causes are changes of temperature, exposure of the abdomen, due to insufficient clothing during the day and improper protection at night; food-stuffs that disagree (and here we must include the artificial foods, as many children cannot take some of these without evil effects, as well as unripe or decayed fruits, tainted meats, etc.), and finally injudicious feeding by overloading the stomach, as seen in many children; also insufficient precaution in preparing foods, etc.

The symptoms and signs of intussusception are pain, vomiting, tenesmus, blood in the stool or a bloody mucus dejection, restlessness, tumor, and later, manifestations of obstruction, peritonitis, and sepsis. Pain has been an ever-present symptom in the author's cases. The abdomen is tender to the touch, manifested by the patient if too young to speak by flinching or crying upon palpation. Vomiting has been present in but three cases and these were the cases of more than twenty-four-hours' duration when seen by the author. It is well to remember that in many of these cases the onset is frequently preceded by diarrhœa and vomiting, so that in many of the cases in which vomiting was an early manifestation it may have been but an accompaniment to the pre-existing condition of health.

There may be, and frequently is, an evacuation of more or less extent, due to feces in the intestine below the seat of the intussusception. This evacuation is not accompanied by blood or bloody mucus. Later there are passages which consist of blood and mucus or may be largely composed of blood or mucus simply tinged with blood. The presence of blood is readily ascribed to the obstruction producing strangulation of certain parts of the vessels and increasing arterial and venous pressure sufficient to produce hemorrhage by diapedesis and even by rhexis. Tenesmus is frequently observed following the first few passages. The patient does not lie quietly in bed during the early hours of the disease, but is constantly tossing and moaning and continues doing so until the gut is reduced or until gangrene and sepsis are established. If after an injection the restlessness and moaning cease, *i.e.*, during the first twenty-four to

forty-eight hours, it can be safely stated that reduction has taken place.

The proverbial sausage-shaped tumor cannot be found in all instances. In the case of three patients, operated upon by the author and palpated by most able diagnosticians, no tumor was to be felt through the abdominal wall, but the symptom-complex was so perfect of intussusception that abdominal section was performed and a tumor found. The reason was readily explained, as in two cases the tumor was found well under the ribs in the left hypochondriac region and in the third well under the right lobe of the liver. Digital examination frequently proves the presence of this condition, as the palpating finger comes in contact with the mass in the rectum. In one of the author's cases, in which no tumor was palpated externally, it was thought that the very tip of the finger came in contact with a fold of intestine foreign to the anatomy of that part.

The author cannot agree with those who state that children bear operations poorly, and is quite satisfied that when the cases are seen early, say during the first thirty-six hours, the chances for recovery of the patient are extremely favorable. One of the writer's cases of recovery reported in this paper, a child under seventeen weeks of age, was operated upon during the first thirty-six hours. Another, a child of four months and twenty-two days old, was operated upon during the first twenty-four hours. The relationship of recoveries between strangulated hernia and intussusception with regard to previous duration is very similar. The longer the duration, the greater the mortality, due in each instance to the same causes—shock, exhaustion, gangrene, and sepsis.

In chronic intussusception, advancing in nature, the treatment resolves itself into an end-to-end anastomosis (after reduction as far as possible has been performed). Typical resection with end-to-end anastomosis should only be undertaken in those cases in which the patient's condition will warrant prolonged interference. The choice then lies in the hands of the operator between the use of Murphy's button, the Maunsell operation, and direct end-to-end anastomosis. Owing to the fact that more than one intussusception can take place, it is advisable to thoroughly examine the entire intestinal tract before closing the abdomen. Owing to the great variance in the mortality-rate as given by three most excellent observers

during the past three years, Rydygier, 1895, 75 per cent.; Wiggin, 1896, 22 per cent., and Gibson, 1897, 53 per cent. The writer intentionally avoids presenting statistics which might further bewilder the reader.

Bristow, A. T.: Stone in the Bladder in Very Young Children. (*Brooklyn Medical Journal.* 1898. Vol. xii., No. 9.)

The author reports three cases of this disorder, the first occurring in a child three and a half years old, the stone weighing 170 grains. The other two were below that age. In speaking of diagnosis, the author refers to the fact that in an adult symptoms of irritability about the bladder will soon lead to the introduction of a searcher, particularly if long continued and accompanied with the classical symptoms of stone. It must be remembered, however, that little infants are unable to locate their pains and aches and describe their symptoms with the accuracy of their elders. Thus it has happened, no doubt, that these cases are overlooked. There are three symptoms, which, when observed in the same case in childhood, point almost conclusively to the existence of calculus; a long prepuce, pain on urination, the passage of blood, particularly at the close of urination. The long prepuce is caused by the constant traction the child makes on the prepuce to relieve the pain which it no doubt refers to the end of the penis as in the adult. The exquisite pain, far more severe than in the adult, is the result of the driving of the calculus by the expulsive efforts of the bladder against the sensitive vesical neck. In this way also is caused the bleeding. Priapism, which is a less common symptom, depends, where it exists, on reflex irritation. In the first case referred to the bladder reached almost to the umbilicus. The author believes that the increased size of the viscus was caused by the fact that the child refrained from urinating as long as possible owing to the pain thus caused, and that in this way a slow dilatation of the bladder was produced. The acuteness of the urinary symptoms in the child are far greater than in the adult. A ready explanation for this fact may be found in the anatomical situation of the viscus in childhood which is almost wholly within the abdomen. Thus of necessity the stone will rest in the most dependent part of the bladder, which is the neck, whereas in the

adult it usually lies behind the prostate, and only occasionally rolls against the vesical neck.

What other affections may be confused with stone? From the fact that an elongated and narrow prepuce often gives rise to quite serious bladder disturbance, the cases of stone which, as stated, usually have a long prepuce, are apt to be overlooked and the symptoms ascribed to the less grave condition. This error can be avoided in two ways. First, a circumcision which does not put an end to the irritative symptoms should be followed by exploration with the searcher. Second, it is to be remembered that the pain of the graver condition is characteristic and far more serious than the irritation which can come from a tight prepuce. The bleeding where this occurs should always lead the attendant to suspect the existence of a calculus. Blood in the urine occurs from two other causes, tumor and sarcoma of the kidney. Tumor of the bladder is of the greatest rarity in young children, and where it occurs the bleeding is far more profuse than in stone. The presence of a rapidly growing tumor in the loin will serve to make a distinction between sarcoma of the kidney and the benign affection. Rectal irritation from ascarides, etc., may give rise to vesical irritability. The absence of the cardinal symptoms of hemorrhage and great pain on urination will render the distinction between the two affections plain. Given then the probability that a stone exists in the bladder of one of these little patients, how shall we proceed to investigate the bladder? An anæsthetic should always be given, for two reasons. First, because it is impossible to make a thorough search otherwise; and, second, because without the anæsthetic there is danger that the child in its struggles may lacerate the deep urethra, especially in front of the undeveloped prostate. An ordinary sound is a bad instrument to use in a child. Beyond the triangular ligament, the curve of the urethra is very much sharper in the child than in the adult. For this reason it is advisable to use the Thompson searcher with the short curve. This can be turned from side to side in the bladder with greater ease than the instrument of wider curve. As usually made, this instrument is about 15 Fr., and will slip into the urethra of a child of three without trouble. No force must be used, and the instrument should be directed so that its beak hugs the anterior wall or roof of the urethra. It is of advantage, as the instrument is

depressed, to make downward traction at the root of the penis from above to somewhat straighten this curve. When in the bladder, if the stone be large, it will at once be felt. If, however, it is small, it may elude the first search. In case a stone is not found at once, the finger of an assistant may be introduced into the rectum, and the floor of the bladder elevated.

Cheselden, than whom a greater operator for stone never lived, cut three patients and failed to find a calculus in all. The condition which is most apt to be mistaken for calculus, in the author's experience, is the thickened mucosa covering the rugæ of the bladder. This thickening is only seen after long-continued cystitis. It is not, therefore, likely to be misleading in children. Where, in spite of the symptoms of stone, the searcher fails to discover the sound, a suitable silver catheter may be connected with the Bigelow evacuator. After filling the bladder with water, if the bulb of the evacuator is compressed on releasing it, the water from the bladder, as it rushes into the catheter, will carry the stone against it, when the characteristic click will be heard. Here again it is necessary to guard against a source of error. The mucous membrane of the bladder may be sucked into the eye of the catheter and produce a click which is quite misleading. To guard against this fallacy, the eye of the catheter should not be held near the bladder wall.

A stone having been discovered in the bladder of a child, what is the best operation for its removal?

The surgeons of India, who evidently deal with many more cases of this affection in a year than the surgeons of this country see in a lifetime, are most expert operators in litholapaxy, and are in the habit of crushing stones even in young children rather than subject them to a cutting operation. This undoubtedly, in most cases of stone where the mechanical conditions permit, should be the operation of choice.

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FEVERS IN CHILDREN; THEIR SIGNIFICANCE, GENERAL DIAGNOSTIC VALUE, AND ANTIPYRETIC TREATMENT.*

A LECTURE BY SAMUEL S. ADAMS, M.D.,

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GENTLEMEN: Fever is a group of symptoms the most prominent of which is elevation of temperature.

In the healthy child, variations in the production of heat are compensated for by variations in its discharge, while in fevers the production and loss may both be increased but seem no longer to be interdependent. There may be no increase in heat production but a decrease of heat dissipation which will cause a rise of temperature or the converse.

Among the principal causes of fever may be mentioned, first, physiological ferments acting independently of bacteria. A familiar example of fever arising from this cause is afforded by the aseptic fever observed to follow injuries in spite of the strictest antiseptic precautions. A second cause of fever is to be found in the presence in the system of substances which are the product of micro-organisms not in themselves pathologic. They are frequently met with in the infant and young child as a result of fermentative and putrefactive changes. We know that, under certain conditions, certain micro-organisms are present, and although in themselves harmless, they become virulent in their nature as a result of putrefaction or fermentation. In consequence of this, there is set up a septic condition, the principal symptom of which is elevation of temperature. In the third place, we have, as causes of fever, poisons which

* Delivered at the University and Bellevue Medical College, New York, December 20, 1898. Stenographic report by Dr. O. C. Ludlow.

are the result of specific infections. Principal among these are the infections of the acute infectious or contagious diseases. These poisons, as you know, possess certain qualifications, *viz.:* (1) The power of life; (2) the ability to multiply to an unlimited extent; (3) the power of affecting the organism as a whole; and (4) the power of conferring upon the individual that condition usually known as immunity—*i.e.*, a certain protective element enters into their life history, which prevents the individual from having a second attack of these acute infectious poisons. There are, of course, others which give rise to temporary fevers in the child, such as crying or fits of temper, but they are of minor importance.

From these causes of fever we are led to conclude that an elevation of temperature in the child indicates, as a rule, some pathologic condition. Now, in the indication of a pathologic condition we do not necessarily understand that it can be detected even by the most expert upon first sight and without careful observation, but we do mean that by careful observation and training we can determine, in the vast majority of cases, the pathologic condition which produces the elevation of temperature in the child. Accordingly you should not be satisfied simply with an elevation of temperature, but should reserve the right to formulate your opinion as to its cause carefully and slowly, if necessary, in order that you may intelligently apply the means for its amelioration.

From our knowledge of children we understand that the slightest disturbance may produce a very marked rise of temperature, and this leads us to conclude that a great deal depends upon the individual susceptibility of the child to one of the few causes which are responsible for this. To illustrate: A child, from indiscretion in diet, may develop a temperature of 105° or 106° F. Now, we know from experience that a temperature of this kind cannot be maintained with safety for any length of time, but, fortunately for the child, nature is of that generous disposition that usually by a diarrhœal process or by the rejection of food or of offending material, the temperature soon subsides. Sometimes the most violent and fatal disorders of childhood are accompanied by a low range of temperature. This is the case, for example, in the first stage of tubercular meningitis. If, therefore, we depend upon the temperature alone, we shall go astray, since it is not an index of the sever-

ity of the disease. Thus, the pendulum swings both ways. In some cases we may have it swinging so that the temperature is a direct indication of the severity of the disease, while in other instances, it may swing in the opposite direction, and may give no idea of the gravity of the disorder.

In children the temperature is subject to sudden and violent rises, more frequently than in the adult. In the latter there is some part of the mechanism which prevents these sudden fluctuations. In the child, we have not only the primary rise in the afternoon, but not infrequently several maxima and several minima in the twenty-four hours. This, of course, in very many of the acute infectious diseases is of the most confusing character, and should always be borne in mind in estimating the value of this one symptom in connection with any pathologic condition.

Again, we may have not only irregularity, but also remissions to a certain extent—a periodicity. We know there is some regulating influence which will control the periodicity, and we must, if possible, search, and be diligent in this search, for any condition which might produce in the child a remission of the fever. An illustration is to be found in mixed infections. Not long since we were taught that no two infectious diseases could exist in an individual at the same time, and particularly in the case of the acute eruptive diseases of childhood. I was taught this, and believed it. But what has been the result? That teaching has been most emphatically contradicted since then by practical experience; I have not only met with double infections but, during the course of the disease, treble infections. That is to say, during the course of a scarlet fever I have observed a croupous pneumonia, and following this, diphtheria which was clearly demonstrated to be such, both pathologically and clinically. We can, therefore, have during the course of an acute infectious disease, other diseases, and an unusual and sudden elevation of temperature is many times accounted fo by such a mixed infection.

In most of the diseases there are stages, with which I presume you are perfectly familiar. There is the initial stage, the fastigium and the stage of defervescence. But here let me caution you against depending too much upon what you see in books, lest you be sadly mistaken, since in different diseases, and particularly in the exanthemata, these stages are often any-

thing but well-defined. Measles is, perhaps, an exception to this; but in the other diseases of this class you will be very much surprised not to find the gradual rise of temperature, a marked fastigium and the slow decline in temperature which is therein depicted. In children these are irregular, and sometimes most confusing. He who depends upon the temperature chart for his diagnosis will be sadly led astray. This is exemplified very frequently in hospital work, where the internes will bring a temperature chart, and show you, on the strength of its supposed indications, what a nice example of a certain disease is in the wards, when more careful observation will probably show that it is a case of an entirely different kind. For instance, we are taught that in scarlet fever a sudden rise of temperature takes place, and that after this the temperature keeps up for four or five days, with a daily remission, and that the maximum and minimum are about on the same line. We are also taught that with the decline of the eruption defervescence takes place. This is all very nice as a type, but in scarlet fever, taking a large number of cases, we find that the typical chart drawn in the books is not evident. So it is with typhoid fever in children, and this fact probably explains why typhoid fever has not been properly diagnosticated in infancy. It is not rational, and it certainly is not safe for the physician to lose sight of the general symptoms and pin his faith entirely upon the one symptom of fever. In measles, we have one of the most typical charts that can possibly be made. There is a premonitory catarrh, and with this there is an elevation of temperature. It then recedes almost to the normal, but on the fourth day it suddenly rises again, and with this elevation there is an exacerbation of almost all of the symptoms, and the eruption comes out. When the disease is at its height, the temperature may reach 106° F., but the characteristic of this temperature is that it very soon falls. If this high temperature were maintained for any length of time, it would be a very serious matter; but fortunately it usually subsides in a few hours to 100° or less. What does this teach us? You may suspect from the temperature chart alone the presence of measles, but when you consider that there are other diseases, which are specific infections, and which will give a similar temperature curve, you lose faith in that one symptom as being pathognomonic of the disease.

In certain diseases we have the termination of the fever by crisis. Where the fever terminates in this way, it is sometimes very confusing. Thus, it is not uncommon for the physician after a study of the temperature chart in a given case to conclude that he has to deal with typhoid fever, even though there are no rose spots visible; but after several days of fever the temperature suddenly falls to the normal, or below that point, and he then feels that he must abandon his first diagnosis. At such a time it is likely that the physician will awaken to a realization of the full significance of the ratio between the respirations and the temperature. In a case of typhoid fever the respirations may be out of proportion to the temperature and pulse, and yet the presence of a deep-seated pneumonia may not be suspected because of obscure physical signs, until the occurrence of the crisis.

We use the terms intermittent, remittent and continued fevers in a different sense from that which formerly attached to them; they now mean different types of disease rather than different pathologic conditions; and when I use them I wish you to understand that this is the meaning intended to be conveyed.

What is the significance of the daily excursion of temperature? By daily excursion of temperature we mean the temperature taken in the twenty-four hours. It may be taken five or six times, or three times, it matters not; the daily excursion is the difference between the maximum and minimum temperature for the twenty-four hours. The significance of the daily excursion of temperature is great; it is a very important guide to prognosis as well as diagnosis. The daily range of temperature will vary in different individuals. If there is a daily range of 103° to 105°, that means that the excursion is 2° for the twenty-four hours. It does not make any difference, so long as we have a safe guide, how high the temperature is in any fever of childhood. By safe guide, I refer to the *manifestations* of high temperature. The mistake is constantly being made by general practitioners of placing too much dependence upon high temperature *per se*. An elevation of temperature without corresponding evidence of cerebral disturbance is of no significance. For example, a child has croupous pneumonia. The temperature range is from 103° to 104°, or 105°. The individual is getting sufficient air; the pulse is good; there are no

mental disturbances and the physical signs are well-marked. Under such circumstances, it is bad practice to attempt, by any active measures to reduce the temperature, simply because it reaches the degree of 105. The reason for this statement is, that we know croupous pneumonia to be a self-limited disease, and that it ordinarily runs a definite course, which terminates by crisis. Reasoning from this, the temperature should be let alone. On the contrary, suppose that the temperature is 105°, with manifestations of the injurious effects on the nervous centres. Here, it would be bad practice not to interfere and relieve, for a few hours at least, the brain from the deleterious influence of the high temperature.

In the treatment of all acute infectious diseases, this principle should be your guide: Rather use intelligence in interpreting the injurious effects of high temperature than plunge the patient into a bath, or resort to internal means of reducing temperature because the thermometer registers a high degree. Some children will bear a temperature of 103° or 104° without any cerebral manifestations, yet in the same family there may be other children who are thrown into a state of high nervous excitability, or even into convulsions, by a temperature of 101° or 102°. You must, therefore, determine the effect of the high temperature upon the *individual* child rather than base your treatment on the height of the temperature alone.

Parents are terribly frightened by high temperature, and insist upon the physician doing something to relieve it. They frequently say to me: "The temperature is 103° F. or over, why don't you reduce the fever?" My invariable answer is: "As long as with this temperature there are no evidences of injury, nothing should be done."

Upon the methods of taking temperature will depend, in great part, your success. You are taught aseptic surgery and aseptic midwifery, and you are also, I know, taught aseptic thermometry. Nothing shows the care of the physician, and nothing will so impress the family as the care which he bestows in the use of the thermometer. You may think that having washed it and placed it in your pocket, you have done all that is necessary. When you go to a child, however, the mother does not know but that the thermometer has just been in the rectum of another child. You should therefore make it a practice to cleanse the thermometer in the presence of the parents or the nurse, both before and after using it.

You can get the best results by taking the temperature of an infant in the rectum. Only recently I was called in consultation by a physician who was old enough to be my father. He stated that the infant had no fever, and he could not understand why the child seemed so sick. On inquiry, I learned that he had taken the temperature of the child—an infant of nine months—in the mouth! I then insisted upon having the temperature taken again, both in the mouth and in the rectum. It registered normal in the mouth, but 105.5° in the rectum. Not only this, but the baby was suffering from a croupous pneumonia presenting the clearest physical signs. I stated to the family that the crisis would occur in twenty-four hours, and this prediction was fortunately confirmed. But you say: "The child is fractious and some mothers do not wish to have the child disturbed by having the temperature taken in the rectum." If you wish to be successful in practice, you must be an autocrat, and you must teach people that you will, under all circumstances, have your way. Make them understand that you are going to take the temperature in your way, and if the parents will not consent to this, withdraw from the case. You will give some offense, and occasionally lose a patient, but in the long run it will be to your advantage as well as to theirs.

The way to make a diagnosis is not on any one symptom, but on the group of symptoms which the pathologic condition presents. Usually the first thing the family wishes you to do is to reduce the temperature. Bear in mind what I have said, that if there is no sign of cerebral disturbance, though the temperature is high, there is no necessity for its reduction. I venture to say that if you simply attempt to reduce the temperature, losing sight of everything else, in the vast majority of cases the diagnosis will be obscure. We often lose sight, in this way, of the most valuable symptoms; hence, my advice to you is, if on approaching a case for the first time you find an up-and-down temperature without evidence of cerebral mischief, to remember that the reduction of the temperature may please the family, but it will only add to your confusion. If the temperature is not doing harm, therefore, reserve the right of allowing it to go on until you have determined the true nature of the disease. Meanwhile it may be necessary to give a placebo. After you have made your diagnosis, if reduction of the temperature is demanded, you can do it intelligently and

safely. The successful issue of a case conducted on this plan will more than please both the physician and the patient's family.

This brings me to the question of the treatment of fevers.

The first is the administration of internal antipyretics, in the use of which great harm is very frequently done. It is true that by a good dose of antipyrine, acetanilide or phenacetin we can reduce the temperature and make the child apparently better. The parents are satisfied, and you may think you have accomplished something; but what is the result? The effect of internal antipyretics is transitory, and consequently you must resort to one of two things—either allow the temperature to return to its former height, or reduce it by the further administration of powerful antipyretics. In this way you not only confuse the diagnosis, but do much more, for, such drugs exert a violent and paralyzing effect on the heart.

I do not mean to decry the judicious administration of them, but I do believe that antipyrine, in the hands of even the most skilful, is a most dangerous drug. I have seen the ill effects of it, and the apparent good effects. I have seen a child wildly delirious from croupous pneumonia made rational by a dose of antipyrine, so that it could sit up in bed and chat with its parents, but I have seen the same child relapse into a condition of high temperature within twenty-four hours because the heart had never regained the tonicity which it had had prior to the violent reduction of the temperature by antipyrine. My experience with antifebrin is similar. With phenacetin I have had a little more favorable results. Of the internal antipyretics it is one of the safest, but it should be given judiciously, and only in those cases in which we require a rapid reduction of the temperature. Its administration should usually be accompanied by free stimulation. These antipyretics act in two ways, *i.e.*, they lessen heat production and increase heat dissipation, and we must take this into consideration in determining the nature of the antipyretic to be given.

The second method of reducing temperature is by the external application of cold. This method is not only the most beneficial, but it is the most stimulating to the various systems. It may be done by means of the cold pack, by the application of the ice-cap to the head, or of the ice-coil to the abdomen; but far beyond the beneficial effects of the wet-pack and these other methods, the application of the Brand method, pure and

simple, is unquestionably the best means of reducing fever, no matter what pathologic condition exists. I say this without any hesitancy. I have no compunction whatever in taking from its bed a child having one of the infectious diseases with a high temperature and accompanying nervous excitement, and placing it in a bath under proper conditions, for, I believe that I am not only reducing the temperature but am placing the system in far better condition than prior to the administration of the bath. You have probably been taught the Brand method, but remember it must be carried out in every detail. It is not sufficient to take the little one out of bed and place it in a bath-tub. The bath-tub should be brought to the patient, and the latter should be gently lifted out of bed and placed in the tub, and then the manipulations should be conducted during the bath, and the necessary stimulation given. The result is that the reduction of the temperature is effected with perfect safety.

I have demonstrated to my class in the Georgetown University a case like the following: A child of eight years who was wildly delirious with typhoid fever was placed in a tub containing water at a temperature of 90° F., and kept in this bath for fifteen minutes. Enough heat was dissipated from that child to raise thirty gallons of water 4° F. This shows the immense amount of heat abstracted. And the child, who was wildly delirious at the time the bath was begun, became conscious and rational; the pulse increased in force. Quite commonly the temperature rises after three or four hours to its former height, when the bath can be repeated.

In connection with the treatment of acute infectious diseases, I am frequently asked why we do not see so frequently the complications and sequelæ commonly observed in former years. When I began to practice medicine, as soon as a child was attacked by one of the eruptive diseases, he was isolated, and every crack in the windows of the sick-room was sealed. A blanket was placed over every door but one. The child remained in that vitiated atmosphere from the beginning to the end of the disease, with the result that there was a continual inhalation of a vitiated and germ-laden air. Twenty years ago to give a drink in such a case was equivalent to the physician receiving his passport, so far as that household was concerned. In private practice the complications of scarlet fever, and the post-scarlatinal conditions are now much less frequently seen

than they were ten or fifteen years ago. It can be attributed not only to the freer use of water and better ventilation of the sick-room, but also to the practice of placing such fever patients in baths when the temperature requires reduction. Such treatment favors the elimination of the toxic material, and. as a result, convalescence is more rapid and smooth, and the complications and sequelæ are avoided.

The temperature of the bath varies considerably in different cases. With a temperature of 105° be very careful how you reduce the temperature of the bath below 95°, the books to the contrary notwithstanding. If you can accomplish what you desire by a warmer bath, and with less inconvenience and discomfort, why should you use a colder one? Some advise a bath at 60° or 55° F., and some even a bath at 50° F. I claim that just as good results follow the use of a bath having a temperature of 95° to 100°, provided a cold cloth is applied meanwhile to the head. The ordinary duration of the bath is ten minutes, and during this time the patient should be subjected to continuous friction. I should hesitate a long time before giving my consent to a fever patient receiving a bath at 55°. Your city water probably has a temperature of about 50°, so that you can readily test the effect of such a bath on a normal temperature by jumping out of bed into water just drawn from the faucet. I am confident that if you try this, you will render a verdict in accordance with what I have said.

I hope you will carry away with you these few thoughts about the fevers of childhood. I am sure with the systematic teaching which you receive from the professor in charge of pediatrics, whom I have known for many years, you will be amply qualified to carry out the few principles which I have laid down in this lecture.

1 DUPONT CIRCLE.

TRACHEOCELE.

BY J. PARK WEST, M.D ,

Bellaire, Ohio.

This case was first seen by Dr. G. Ackerman, of Wheeling, W. Va. Dr. Ackerman recognized the nature of the trouble and kindly referred the case to me.

The child is twenty months old, and is in every way a well developed, healthy child, with the exception of this swelling in

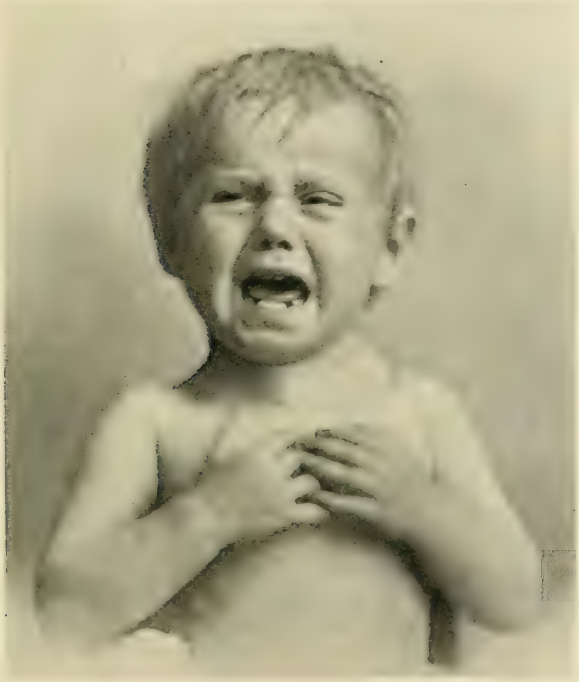


TRACHEOCELE—SHOWING THE TUMOR IN THE USUAL CONDITION WHEN THE CHILD IS AT REST.

the neck. The parents are Poles, and had lived in this country two years before this child was born. They, as well as the only other child (four months old) in the family, are healthy. No history of any swelling of the neck or any other disease bearing on the case in the ancestors is obtainable. Close questioning

does not disclose any past sickness in the child, nor any prolonged coughing, vomiting, or straining, nor anything to account for the trouble. When she was fifteen months old there was noticed, at times only, a swelling one-fourth inch in diameter a little to the left of and just below the level of the larynx. For a short time after its first appearance it would occasionally disappear; later it would disappear only on deep inspiration; while now it is always present and cannot be gotten entirely rid of. Within the past two months, excepting the last two weeks, it has grown more rapidly than ever before. The swelling now is the size of a hen's egg, on the left anterior neck, just above the clavicle, well separated from the larynx and trachea, and occupies the same position as when it first appeared. To the eye and hand it is smooth. There is no fluctuation nor crepitation, but a soft gaseous feeling when the child is quiet that becomes tense when she is disturbed. Continued pressure when the child is at ease causes three-fourths of the swelling to disappear, but it immediately returns to the original size when the pressure is removed. When compressed, a distinct smooth membrane, apparently one-eighth inch in thickness, can be felt. On ordinary respiration there is no change in the size of the swelling, nor any movement to show that it is connected with the respiratory apparatus. Any increased depth of inspiration is followed by a proportionate diminution of the size of the swelling, while on deep inspiration the size is diminished one-half. On deep, prolonged, or restrained expiration, as when crying, the original swelling is increased to double its usual size, and two more swellings connected with it appear and give the whole a lobulated appearance—one in the centre of the neck, just below the larynx, an inch in diameter; the other immediately above the first above described, an inch and a half in diameter. These cause an increase in the circumference of the neck from nine to eleven and a fourth inches. There is a tympanitic sound on percussion, but nothing is heard on auscultation. The child is not inconvenienced in any way by the swelling, and there seems to be no interference with the movements of the head, nor in breathing or swallowing. The changes in the size of the swelling are always made with the very greatest rapidity and without any sound. When tense, pressure externally has almost no effect on it. An attempt was made by pressing one finger over

the opening into the trachea just below the larynx to confine the air in the sac, but this was only partially successful, only delaying slightly the exit of the contained air. The larynx retains its natural position, and the thyroid is of normal size. The voice and cry are not changed.



TRACHEOCELE—SHOWING THE TUMOR WHEN THE CHILD IS MAKING A STRAINING EFFORT, CAUSING IT TO BE MORE PROMINENT.

Very few authentic cases of tracheocele have been reported. Eldridge (*Münchener Medinische Wochenschrift*, Oct. 22, 1895, page 999) says that only four well authenticated cases were on record up to 1880. A search through literature since that time reveals the following papers upon this subject: BARACZ, R.—Tracheocele mediana. *Gaz. lek.*, Warszawa, 1891, 2. s., xi, 136. BURCKHARDT, H.—Ueber Tracheocele und Kropf., *Med. Cor. Bl. d. württemb. ärztl. Ver., Stuttg.*, 1888, lviii, 97. DAREMBERG, G. and VERNEUIL, A.—Observation de trachéocèle. *Rev. de Chir.*,

Par., 1886, vi. 417. GAUTHIER.—Observation d'unesingulière tumeur du cou; tracheocele. *J. de med. et Chir. prat.*, Par., 1882. liii, 448. GIRAUD, F.—Trachéocèle traumatique. *Rev. de Chir.*, Par., 1887. vii, 54. PETIT, L. H.—Des tumeurs gazeuses du cou (aérocèles, bronchocèles, laryngocèles, tracheocèles, des auteurs). *Rev. de Chir.*, Par., 1889. ix, 97. WOLSENDEN, R. N.—On "aerial goitre" and "tracheocele." *J. Laryngol.*, Lond., 1888. ii, 99. KLAUSSNER, F.—Ueber Tracheocele und Blähkropf. *Munchen. med. Wchnschr.*, 1895. xlii, 997. KAYSER, R.—Tracheocele durch Ulcus luet. *Monatschr. f. Ohrenh.*, Berl., 1895. xxix, 314. ROQUET, J.—Acercade un caso de tracheocele. *Enciclopedia, Barcel.*, 1895. viii, 163. HERZFELD, J.—Ein Fall von Tracheocele. *Berl. Klin. Wchnschr.*, 1897. xxxiv, 1080.

Etiology of Epilepsy.—The general causes assigned for epilepsy are much the same as those for idiocy. That the malady is frequently transmitted by heredity is clearly proved by Dr. Féré. He observes that when the marriages of epileptics have an average fecundity, scarcely one-fifth of the children are healthy. Epilepsy seems to be propagated more directly than are other neuropathic diseases. This is what is called similar heredity. Eccheverria found that out of a total of 572 epileptics, 39 per cent. had an hereditary taint received directly from the parents. In many cases epilepsy appears in the collateral lines, and sometimes passes over the son or daughter to affect the grandchild. Sometimes, on the other hand, the neurosis takes another form, such as idiocy, insanity, hysteria, hemicrania; or the epilepsy is combined with these affections. Perhaps as many as one-fourth of all idiots are epileptics, or have fits now and then. Drunkenness in the parents is found to be a common cause. Eccheverria found it in 17 per cent. of his cases, but Wildermuth in less than 2 per cent. Excess in alcohol may originate epilepsy or bring it back after the disease seems to be cured. The craving for intoxicants may itself be an inherited disease, apt to propagate its like or some other form of neuropathy. Epilepsy is occasionally caused by injuries to the head or by cerebral tumors. Brown-Séquard has proved by experiment that guinea-pigs may be rendered epileptic by lesions of the sciatic nerve or of the spinal cord, and that this epileptic proclivity was transmitted to their descendants; and Luciani has observed the hereditary transmission of epilepsy in animals in which the disease was provoked by irritative lesions of the brain.—*Ireland*, "*Mental Affections of Children.*"

BLACK TONGUE; WITH PHOTOGRAPH OF A CASE AND BRIEF CONSIDERATION OF ITS ETIOLOGY.

BY WILLIAM S. GOTTHEIL, M.D.,

Professor of Dermatology at the New York School of Clinical Medicine.

Nigrities, glossophytia, or black tongue, rejoices in a fairly extensive literature; yet the affection is quite rare, and few cases are recorded in recent medical writings. The history of the following case, with photograph and drawing of the microscopic findings, therefore seems worthy of note.

Peter McG., two years old, was sent to me on November 3d of last year, by Dr. H. G. MacAdam, with the following history: Had always been a perfectly healthy child, and was well now, save for the affection of the tongue. This had first been noticed when the baby was one year old. The mother took him to a physician at the time, and he was given some medicine which cleared off the tongue in a few days. Three or four days afterwards, however, the black discoloration returned. On at least two occasions since that time the child had been treated with the same temporary result.

The boy was healthy and well nourished, with clear complexion and firm muscles. The gastro-intestinal tract was in perfect order; and the child's well-being and good temper was evidenced by the docility with which he permitted the examination and photographing of the affected organ. Fig. 1.

The centre of the dorsum of the tongue was occupied by a dark greenish black streak, commencing abruptly immediately in front of the circumvallate papillæ and extending down almost to the tip. It was about three-fourths of an inch wide posteriorly, narrowing gradually towards the anterior portion of the organ. The sides of the dorsum and the under surface of the tongue, as well as all the rest of the buccal and gingival mucosa, was normal. The black streak was slightly elevated, its surface looked gelatinous, and it ended in a rather abrupt margin on either side; the rest of the dorsum of the tongue being not even coated. There was no apparent papillary hypertrophy, none of the threadlike excrescences which have been noted in many of the recorded cases, and from which the name of hair tongue or black hair tongue has originated. The black coloration was

most intense in the centre of the streak, and faded somewhat to grayish at its margins. The appended photograph was taken a few days later, when treatment had already been begun, and clearing had commenced. I might add here that an accidental discoloration, such as might have occurred from licorice or foods, was excluded by the history, and by the fact that the child had had nothing that could have produced such an effect. The only subjective symptom was dryness of the mouth: the mother said



Fig. 1. BLACK TONGUE.—*Photograph by the Author.*

that the child seemed thirsty, and drank much water, but the tongue and mouth was apparently normally moist.

Scraping the gelatinous colored streak upon the tongue with a blunt instrument permitted the ready removal of a quantity of mucous and saliva which contained macroscopically visible fragments of the deposit upon the tongue; and it was apparent that a vigorous grattage would have sufficed to remove most, if not all, of the discoloration. An immediate microscopic exami-

nation was made of the scrapings, both in the fluid obtained with it from the surface of the tongue and in dilute glycerine. Besides normal epithelial cells of various kinds, detritus, and some small round spore-like bodies, the fragments removed seemed to consist entirely of masses of the bodies pictured in Fig. 2, which is from a drawing made at the time. So abundant were these peculiar structures that a light scraping consisted of them almost entirely, so far as solid bodies were concerned; they lay in dense masses and heaps upon the slide. More vigorous scrapings gave an increased number of epithelial cells, etc.,

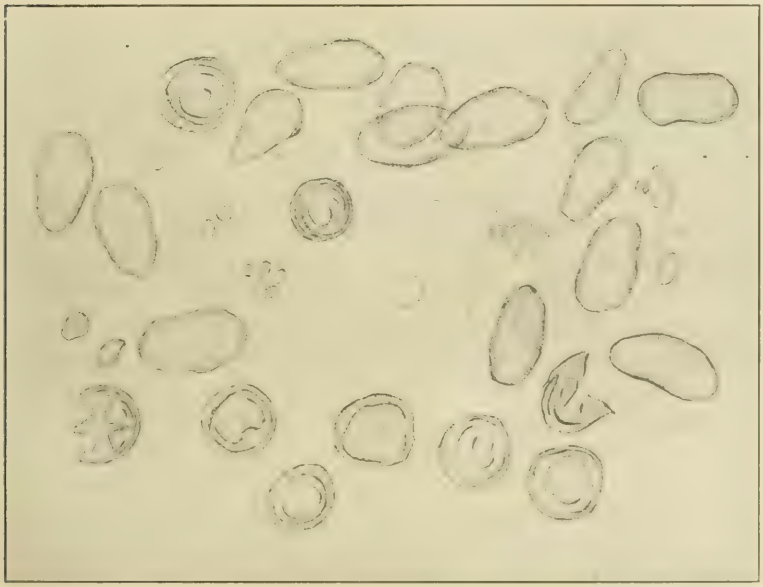


Fig. 2. PARASITE OF BLACK TONGUE.—*Sketch by the Author.*

but nothing else of importance. Their predominence in every scraping was such that it was hardly possible to doubt that they stood in etiological relationship to the discoloration.

These structures in their unchanged state, and the more frequently the more immediately after removal and without the admixture of foreign menstrua the examination was made, appeared as large, irregularly oval, semi-transparent bodies showing a faint gray color under the lens. There were no pigment granules either in them or in the surrounding fluid. Their

grayish color was hardly apparent with the one-tenth immersion, but was plainly discernable with the quarter-inch objective. Occasionally they were found rounded, apparently surrounded by a thickened capsule, stratified, and partially disintegrated, more especially in specimens examined some time after removal from the mouth. These latter forms I regard as disintegration and dessication products of the normal oval cells.

The cells were unconnected with one another, were not arranged in series, and there was no mycelium. Some of the oval bodies showed hemispherical projections (buds); but none of the specimens I examined showed cells in active proliferation. This absence and the disintegrating forms above mentioned were possibly the result of the treatment.

There only remains the fact to note that under a mouth wash of a saturated solution of hyposulphite of soda the discoloration was removed in about a week. Of course it will probably return.

All the earlier recorded cases of black tongue were ones in which the hypertrophy of the filiform papillæ was a marked feature, and hence the affection was called hairy tongue, or black hairy tongue. Parasitic fungi agreeing in their morphological appearances with those here described were found by Dessois, Laveau, Lancereaux, Schech, Gubler, Gundobin and others. Other investigators, however, found only the ordinary fungi so numerous on coated tongues. Leviseur, Solis-Cohen, Burn, Murdoch, Féréol, etc., regard the affection as essentially a papillary hypertrophy of the mucosa, and look upon the parasites described as accidental. Brosin, the very complete monograph of the disease which he published in 1888 as an "Ergänzungsheft to the Monatshefte für praktische Dermatologie," cites forty cases recorded up to that time; and, though he admits the presence of the oval fungi described, voices the general verdict at the time which regards the affection as a simple hyperkeratosis of the lingual papillæ, with pigmentation of the redundant epithelial cells.

Later investigators, however, and notably Ciaglinski and Hewelke, and Sendziak, have described cases in which the papillary hypertrophy was entirely absent, and which, as in my cases, the only symptom of the disease was the pigmentation. The two former observers described a parasite similar to the one figured here, which, they believed, resembled the mucor rhyzo-

podiformis, and which contained the black pigment of the deposit. Sendziak in two cases found the same fungus, and grew it upon bread paste; he designated it mucor niger. These authorities agree that the discoloration is due to the parasitic growth, and regard the papillary hypertrophy a secondary and accidental. Without it we have black tongue; with it black hairy tongue.

The affection is apparently quite harmless, save for the slight discomfort that it occasions. It is of interest, however, on account of its rarity.

144 WEST FORTY-EIGHTH STREET.

Lectures on Teratology and Antenatal Pathology in the University of Edinburgh.—On the recommendation of the medical faculty and senatus of the University of Edinburgh, and with the permission of the university court, Dr. J. W. Ballantyne, lecturer on midwifery and gynecology in the Medical College for Women, Minto House, has delivered a series of six lectures on teratology and antenatal pathology within the university. The lectures, which were free to the members of the medical profession, were given on consecutive Fridays in February and March, 1899. The following is a syllabus of the lectures: Lecture I.: The scope, interest and importance of antenatal pathology, including teratology and its relation to neonatal and postnatal pathology and to the other branches of biological and medical science. Lecture II.: The pathology of the fœtus; fœtal diseases as influenced by the intra-uterine environment, the placental factor, and the embryonic factor; diagnosis. Lecture III.: The pathology of the embryo; teratology; embryonic malformations and monstrosities as influenced by embryonic physiology, the amniotic factor, and the germinal, or pre-embryonic, factor; classification and diagnosis. Lecture IV.: Teratogenesis, or the causes of monstrosities and malformations; the ultimate causes and the mode of action of the causes of teratological phenomena; experimental teratogeny. Lecture V.: The pathology of the germ; diploteratology; the intraconceptional factor in teratology; the preconceptional factor, or the heredity of diseases and deformities. Lecture VI.: Antenatal therapeutics; possibilities and probabilities; the problems to be solved; fœtal, embryonic, and germinal therapeutics.

POLYURIA AND INCONTINENCE OF URINE; SYMPTOMS OF ADENOIDS.

BY FRANCIS HUBER, M.D.,

New York.

Diabetes mellitus is rare in children. Diabetes insipidus or polyuria is rather more frequent. Under certain conditions, aside from the two referred to, the amount of urine passed by a child may be excessive in amount. The absence of sugar from the urine will exclude the former; a careful examination and study of the symptoms, enable us to exclude the latter.

In rachitic children, particularly those brought up on the bottle, the kidneys are very active, and large quantities of urine are passed. Not infrequently the physician is consulted by an anxious mother, who is afraid that there is something wrong with the infant; the baby passes plenty of water, and as it is always wet, she is compelled to make frequent "changes." The condition is not pathological, for it disappears as the child grows older and takes more solid food. In the cases referred to below, the chief reason for bringing the children for medical advice, was the excessive thirst and large quantities of water eliminated. As these two symptoms were frequently associated with constitutional manifestations, more extended investigations were made, and it was while engaged in working up an allied subject that several interesting observations were noted, a consideration of which may be of interest to those engaged in general practice.

Quite frequently in dispensary and in private practice, patients, more or less neurotic, or having a neurotic family history, are presented who give a fairly constant series of symptoms—dryness of the mouth and tongue, parched lips with great thirst. In addition there is incontinence of urine both day and night, and larger or smaller amounts are voluntarily passed at intervals. The parents are distressed and annoyed by their frequent demands for water, particularly after a few hours' sleep, or upon getting up in the morning.

The children are generally anæmic, have headaches, suffer from cardiac palpitation and are easily excited. They are restless, waking up frequently to moisten the parched lips and mouth; their rest is further disturbed by occasional attacks of "night

terrors." Listless and apathetic, they appear backward. The expression is stupid, with the usual facial characteristics of mouth breathers.

An examination of the urine is negative, no albumin or sugar, the specific gravity is generally low, and the quantity considerably increased. The more marked cases present all the characteristics of diabetes insipidus. The resemblance is striking. Diabetes insipidus may be described as a chronic disease, usually neurotic and functional in character, attended by the excretion of a very large amount of pale urine of low specific gravity, invariably accompanied by increased thirst (polydipsia). In a well marked case, this diagnosis was made, to be dropped later on, when in the course of symptomatic treatment, the naso-pharyngeal condition was attended to.

In the further consideration of cases, we are compelled to recognize the existence of the obstructed nasal respiration. It was found that as soon as the patency of the naso-pharynx was restored, and full nasal respiration established, the health began to improve, the thirst became less, less water was taken and less urine passed. The diurnal incontinence disappeared and with further tonic and roborant treatment, the nocturnal incontinence becomes less frequent, and in the course of time vanishes entirely.

The relationship of cause and effect is evident. The adenoids, with or without associated naso-pharyngeal catarrh, cause mouth breathing. The thirst in a measure is due to the parched state of the mouth and tongue; the child, frequently neurotic, yields to its desires and to satisfy its thirst, drinks more or less at frequent intervals. The result is evident (with the annoyances naturally following such a state) in the large amount of urine secreted and passed. The true explanation is found in the changes in the blood and lymph circulation in the brain, induced by the lesion in the nose. In consequence of these changes the blood is surcharged with carbonic dioxide, or there is a deficiency in the amount of oxygen; the cerebral circulation (both lymph and blood) is interfered with by the obstructive lesion in the nose; finally, undoubtedly in consequence of this interference, many products of cerebral tissue metabolism accumulate in the brain to produce the symptom-complex to which the term "aprosexia" has been applied. Such children are dull, stupid and backward, lacking in general innervation.

They do not pay attention to their wants, and as the higher inhibitory centres are less acute, the bladder reflex is not respected, and incontinence follows.

Ergot, atropia, tonics of various kinds, roborant treatment generally, restricting fluids, and the advent of warm weather, may improve such cases, but only for a time. To complete the cure, the naso-pharynx must be attacked.

With the removal of the adenoids, the cerebral (lymph and blood) circulation assumes a normal character, the mental condition becomes brighter, the other symptoms become less and less, and in time cure results. Roborant and tonic treatment, cold sponging, out-door exercise and other measures contributing to restore tone and improve the general health, must be continued for some time. It should not be forgotten that such patients frequently present evidences of an inherited neurotic condition. The secret of a successful treatment may be summed up as follows:

Improve the general nutrition, restore the tone of the muscular and nervous system, and particularly the "morale" of the little patient. The removal of the obstruction in the nose is followed by a decided improvement in health. The catarrh and associated thickening of the naso-pharyngeal mucous membrane subside gradually; with the disappearance of the secondary effects, the bladder symptoms and incontinence, too, disappear, and a perfect cure results.

209 EAST SEVENTEENTH STREET.

Chronic Atypical Polyarthritis Commencing in Infancy.—Porcelli (*La Clin. Mod.*), records an atypical form of joint disease beginning in a child, aged three months. The disease began with painless swellings over the joints, leading eventually to ankylosis. In addition to these chronic joint lesions some of the ribs were fractured spontaneously. The corresponding muscles underwent secondary atrophy. There was no paralysis or spasm. There was albuminuria and increase in the salts of the urine, with the exception of the urea, which was diminished. No heart affections could be detected. The family history showed a well-marked neuro-arthritic diathesis. The author does not believe in the neuritic or microbic theories of rheumatism, at any rate as far as this case is concerned, but believes it to be an example of diseased tissue metabolism. The exact pathology of rheumatism is yet to seek.—*British Medical Journal.*

IRRIGATION OF THE BOWEL IN FERMENTAL DIARRHŒA.

BY JOSHUA C. HUBBARD, M.D.,

Boston.

As very little space is allotted in the text-books on Pediatrics to this form of treatment in fermental diarrhœa, I venture to bring together here a few facts noted last summer at the Boston Summer Hospital.

There is no doubt but what the worst cases of fermental diarrhœa have clinically the symptoms of a severe toxæmia. In a general way there are two varieties, one in which the child lies comatose with eyelids half open and eyes covered with a film, and the other, in which the baby with its eyes bright and shining is forever moving, never sleeping nor resting but constantly turning and twisting. The latter is less common but has as grave a prognosis as the former.

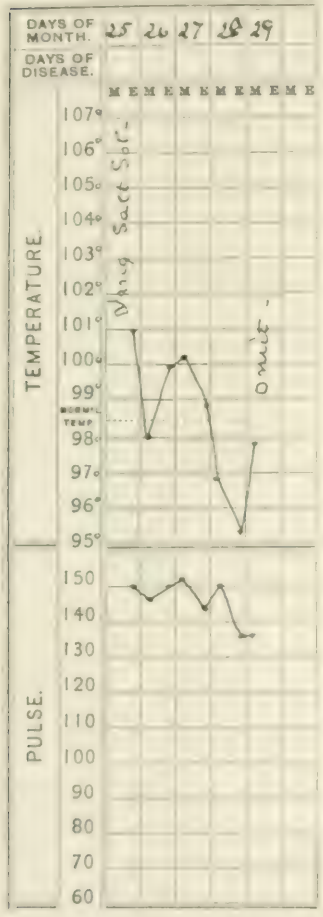
The absorption of the toxic material may take place from any part of the intestinal tract. In this, as in all cases where the patient is being poisoned from a local focus, the obvious procedure is to clean out that focus. The ideal treatment then would be to flush out the digestive tract from mouth to anus. This, of course, is out of the question, but the portions within reach can be attacked.

Only in very severe cases or those seen early is lavage practiced, as ordinarily the offending matter has passed beyond the stomach. All we can do then is to wash out as much of the bowel as possible from below.

To carry out the irrigation one needs only a large-sized soft rubber catheter and a fountain syringe. The catheter should be sterilized each time that it is used to prevent infecting one child with bacteria from another. The baby is placed in the lithotomy position with the hips raised on a pillow. The catheter, free from air and full of the irrigating fluid, is introduced and the syringe held some three feet above the baby. There is no risk of rupturing the intestine, as the straining of the baby when it is uncomfortably full will force the fluid out around the catheter. The more cleanly way is to break the connection between the syringe and the catheter when the baby begins to strain, and

let the out-flow return through the catheter. Often this is grass-green in color and foul smelling and at times brings away large pieces of mucus.

I think the irrigation does good principally by cleansing and therefore it is of slight consequence what fluid is used. At the hospital we used water or salt solution at a temperature of 85° to 90° F. Toward the end of the summer a weak solution of sulpho-naphthol followed by water seemed to give perhaps better results.



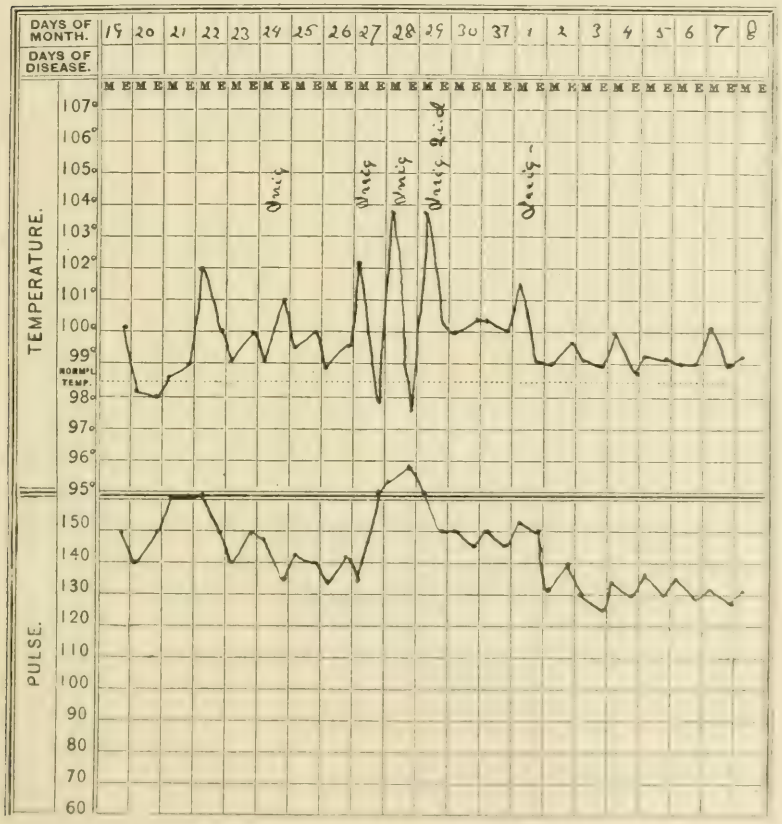
TEMPERATURE RANGE IN CASE 1.

The catheter can, in most cases, be introduced its full length, not simply curling up in the rectum, as often it can be felt through the abdominal wall well over on the right, close up to the liver. It probably passes into the sigmoid flexure and pushes this up with it, for one would not expect to find it on the right if it entered the descending colon. The irrigation cleanses not only this part of the bowel reached by the catheter, but by starting up peristalsis empties the intestine also higher up.

As, aside from the irrigation the treatment of all the children was similar, I have decided to compare the variation from the evening temperature of the first day to the morning temperature of the second in those babies which were irrigated on arrival, and were necessarily few, as only the most sick were thus treated, with that of the unirrigated. This, I think, will throw out as much as possible the effect of the general and dietetic treatment.

During the summers of 1896–97–98, ten babies were irrigated as soon after arrival as possible. Of these seven, or 70 per cent.,

had no rise in temperature the next morning. One, however, had a bath to lower his temperature in addition to the irrigation. Averaging the changes in the temperatures of the ten I find that each case had .76 of a degree less on the morning of the second day than on the evening of the first. Of fifty-two cases last summer not irrigated immediately thirty-one, or 59 per cent., had



TEMPERATURE RANGE IN CASE II.

the same or lower temperature the next day. On the average each case fell .01 of a degree, making a difference of .75 of a degree between the irrigated and the non-irrigated. Thus on the average a greater proportion of the irrigated cases had a greater drop in temperature as compared to those not irrigated. I fully appreciate that the number of these cases is far too small

to permit of drawing definite conclusions, yet the result, I think, at least suggestive.

To illustrate the effect of irrigation in individual cases, I have chosen two temperature charts. In Case I. the temperature was permanently lowered by an irrigation given on the evening of arrival. In Case II. when the morning temperature was elevated he was irrigated with a following decided drop in the evening temperature.

The irrigation not only lowers the temperature but quiets the restless babies, some even going to sleep during the process. The character of the pulse is also improved. Both this improvement in the pulse and the quieting effect may, I suppose, be due to the decrease in the fever.

I know of no contraindications and have seen no bad results from irrigation which seems a most rational treatment.

372 MARLBOROUGH STREET.

Duration of Isolation of School-children for Contagious Diseases in Russia.—The Medical Council of the Russian Empire (*Revue Mensuelle des Maladies de l' Enfance*), has established the following periods of isolation for school-children who have been exposed to an infectious disease or have themselves suffered from such a disease: Scarlatina: After exposure, and without development of symptoms, an isolation of twelve to fourteen days is required. A child that has been ill may be allowed to return to school six weeks after the appearance of eruption, provided there is after that time no trace of desquamation. Measles: Fifteen days after exposure; or, in case the disease has been present, four weeks from the beginning of the eruption, if there is no trace of desquamation. Rubella: Sixteen days; or after two weeks from the beginning of the eruption. Varicella: Seventeen days; or after the fall of the crusts. Pertussis: Fifteen to twenty days; or after six weeks from the beginning of the cough, if kinks have ceased and there is no expectoration. Mumps: Twenty-two days: or after three weeks from the beginning of the parotid swelling. Diphtheria: Seventeen days; or three weeks after the recovery, and after the disappearance of hyperæmia of the pharynx, larynx and nose; if bacteriological examination is possible, only after the disappearance of the bacilli. Variola: Fourteen days; or after the fall of the crusts. All convalescent patients should receive two or three warm baths at 35° C.—*American Journal of the Medical Sciences.*

Clinical Memoranda.

SPONTANEOUS DISLOCATION OUTWARDS OF THE RIGHT KNEE JOINT IN AN INFANT ELEVEN MONTHS OLD.

BY J. W. BALLANTYNE, M.D., F.R.C.P., EDIN., F.R.S.E.,
Lecturer on Midwifery and Gynecology, Medical College for Women, Edinburgh, Scotland.

In the January part of the ARCHIVES OF PEDIATRICS there appears a clinical memorandum from the pen of Dr. Philip F. Barbour, in which a case of spontaneous dislocation of both knees in a child aged eight months is described. By a curious coincidence a somewhat similar case had come under my notice only a few days before I read Dr. Barbour's record in the ARCHIVES. For the sake of contrast and comparison and on account of its rarity I append notes of my patient's case.

On January 2, 1899, I saw, with Dr. John Stevens, a male child, aged eleven months, who was suffering from an anomalous condition of the right knee joint. The mother had given birth to three children, all boys, and the patient was the third. The two older boys were well-formed and healthy in every way. The present child was the product of a pregnancy which was obstetrically normal; the labor also was normal and the infant was born without help. It has to be noted, however, that the mother is now in an advanced stage of phthisis, and that she must have been tubercular during the pregnancy which ended in the birth of the boy now under consideration.

The child is well-nourished, healthy looking, and normal in every way save for the condition of the right knee joint. He is beginning to walk and can rest his whole weight on the right leg. For some time, however, his mother has noticed that every now and again a peculiar change takes place in the right knee, accompanied by a slight creaking sound. This occurs especially when the right foot is pressed against the left leg, and most often when the child is struggling and restless. It is believed that it

is a congenital condition, although the mother does not remember when she first noticed it.

The two knees do not appear to be dissimilar, but the dimple over the external condyle of the femur in extension of the joint seems to be more marked on the right side. Both legs can be fully extended, and manipulation of the knee joints on both sides can be carried on without the infant apparently suffering any pain or inconvenience. If, however, the right leg be grasped in a position of nearly full extension and the upper end of the tibia be pressed outwards a partial dislocation takes place. It can be clearly felt that the head of the tibia moves outwards till a projection appears on the outer side of the knee joint and a corresponding depression on the internal aspect. It is evident that there is a dislocation outwards of the head of the tibia. The displaced part can be easily returned and the infant does not appear to suffer at all during the process. It is clear that this is what occurs spontaneously when the boy presses the inner border of his right leg against any resisting surface. In both knee joints the patella can be felt and does not seem to be abnormal; but in the right knee the external condyle of the femur projects somewhat less than normal. The slipping out and in of the joint sometimes takes place very frequently without inconveniencing the infant. The two lower limbs do not differ from each other in shape or size, and there is no tendency to club-foot.

A circumstance of some possible etiological importance was found in the history of the father of the child. He was an only child and was born with a condition of nævoid hypertrophy of both upper eyelids, but especially of the left, with a nævus on the vertex of the head over the sagittal suture, and with two nævi on the back, one over the lower angle of the scapula on each side, that on the right side being the larger. These conditions were all present still with the exception of the nævus on the top of the head, that had disappeared as the result of a blow from a stone, followed by great hæmorrhage, which he had received in his boyhood. In its place could be felt a distinct depression in the outer aspect of the cranium. The nævoid condition of the upper eyelids was very disfiguring and he had been many times operated on for its mitigation; setons, ignipuncture, and electrolysis had all been tried without materially

diminishing the size or vascularity of the lids. It is worthy of note that his mother had a nævus on her left arm.

This curious condition of the knee joint must evidently be associated with a large degree of relaxation of the ligamentous structures in the joint and especially of the crucial ligaments. The treatment which is being adopted is fixation of the joint by a retentive apparatus, in order to permit contraction of the ligaments should such a tendency exist.

24 MELVILLE STREET.

A CASE OF STREPTOCOCCUS MILK INFECTION.*

BY GEORGE WOODWARD, M.D.,

Philadelphia.

Dr. Wm. Royal Stokes in his report to the Baltimore Health Department† upon the microscopic examination of milk concludes that "the microscopic examination of the centrifugalized sediment of the milk from a herd of cattle if found to contain an excessive amount of pus should suggest a careful inspection of the herd." He excludes from the herd a cow yielding pus-containing milk in which the average number of pus cells per field in the stained centrifugalized sediment from 10 c.c. of milk shows more than five pus cells to the field of a 1-12 inch oil immersion lens.

Acting upon the conclusion of Dr. Stokes, the Philadelphia Board of Health has undertaken a similar investigation. One or two samples of milk daily are delivered to the bacteriological laboratory for examination and report.

In the first month the laboratory found three samples of milk containing pus corpuscles and streptococci and one containing pus without the organisms of suppuration from which, however, streptococci were obtained by cultivation.

I wish to report one case to illustrate the value of this work. A woman brought to the milk inspector a sample of milk from her usual household supply, stating that whenever she drank

* Reported to the Philadelphia Pediatric Society, February 14, 1899.

† Annual Report, Health Department to Mayor and City Councils of Baltimore for year ending December 31, 1897.

the milk it made her "deathly sick." This milk, upon microscopic examination, gave a striking picture of pus corpuscles and streptococci organisms. The field has been reproduced as a photo-micrograph, and is shown by the accompanying plate.

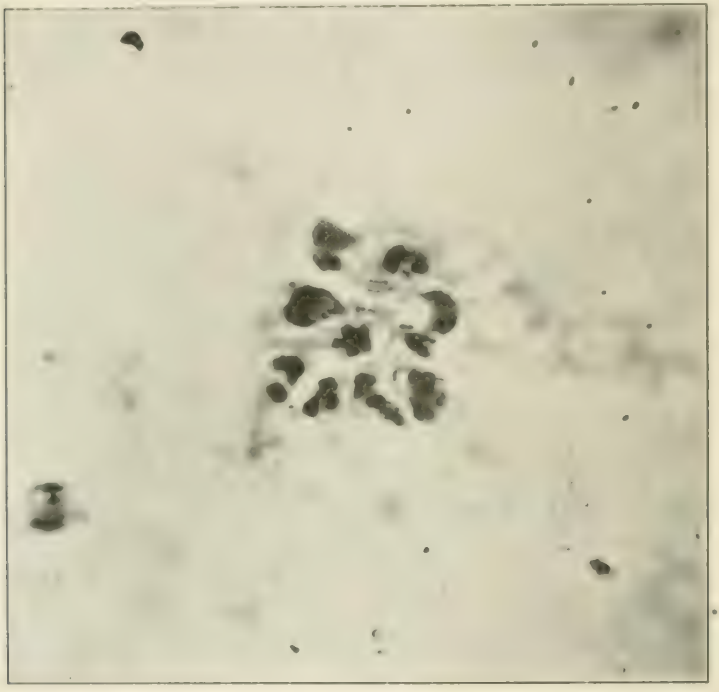


PHOTO-MICROGRAPH SHOWING PUS CORPUSCLES AND STREPTOCOCCI IN SAMPLE OF INFECTED MILK.

In this case the milk inspector stopped the sale of the milk within the city limits. At the same time he wrote to the dairyman who sold the infected milk in bulk to the city dealer, advising him to consult a veterinarian, and that his milk would not be admitted for sale within the city limits until he furnished a clean bill of health for his herd of cows.

The veterinarian, Dr. Theo. T. B. Kirk, reported as follows:

"*To whom it may concern*—This is to certify that I have, this day, carefully examined the dairy, consisting of seventeen cows, belonging to C. P., of Rushland, and find fifteen of them to be in good condition; one Jersey, with first calf, giving bloody milk from the left anterior quarter of udder, and one graded Alderney giving pus from the right posterior quarter of the udder."

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

APRIL, 1899.

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HEART DISEASE IN CHILDREN.

The diseases of the heart present many peculiarities during early life which may easily mislead those who have studied them only in the adult. They develop between the fifth and twelfth years more frequently than at any other period of life. They occasionally follow measles, diphtheria, and scarlet fever, especially when renal symptoms are present. In a vast majority of cases, however, the exciting cause is rheumatism. The symptoms of rheumatism at this period of life are frequently very obscure and its presence is overlooked or never suspected. In many cases of cardiac disease, therefore, no reason can be elicited for its occurrence.

A cardiac murmur is frequently heard during the course of chorea. The relation between rheumatism and chorea is so close, however, that in most cases the cardiac complication is rheumatic in its character. Still it must be admitted that a murmur is sometimes heard in chorea when no rheumatic element can be detected. The murmur sometimes disappears as the choraic symptoms subside and it was formerly believed that such a murmur was frequently functional in character. The more extended observations of recent years show that this is

rarely the case. It is as a rule organic. It is perhaps always such. It is true that the murmur accompanying chorea sometimes disappears, but if such cases are kept under observation, it will be found that in a considerable number the abnormal sounds reappear after the lapse of a few weeks or months. There is strong ground for the belief that chorea complicated by endocarditis, is always rheumatic chorea, and that the endocarditis is, in fact, an expression of rheumatism rather than of chorea.

THE CLINICAL HISTORY OF HEART DISEASE IN CHILDREN.

The clinical history of heart disease in children may be divided into three periods—acute inflammation (endocarditis), compensation (hypertrophy), heart-failure (dilatation). These periods are not always clearly defined, nor do they always follow in the same order. Complete compensation frequently follows a period of failure of heart power.

It is absolutely necessary for the successful management of such cases, that these distinctions be constantly borne in mind. All that treatment can accomplish is to establish and maintain compensation. If compensation be perfect already, as it so often is in children, there will be no symptoms whatever of heart disease and nothing to treat. It is highly improper to treat a child for *heart disease* simply because a murmur has been heard in an examination of the chest. But this does not mean that the physician has no duty toward such a patient. The parents should be informed of the condition present and the physician's advice should be sought at the first appearance of anæmia or impaired nutrition. Heart-failure may take the place of compensation with surprising rapidity, and should be checked at its first appearance. Nutrition should be maintained at the highest possible point; exercise and games should be regulated and intercurrent attacks of illness should receive special atten-

tion. The child should be scrupulously guarded against every condition that may tend to precipitate an attack of rheumatism. Upon this point, above all others, the parents should be especially warned, and the mildest attacks should receive immediate attention.

The interval from the thirteenth to the fifteenth year is a period of especial danger in the life of a child suffering from heart disease. From the seventh to the fourteenth year the volume of the heart increases but little. There is then a period of sudden heart growth. This is, therefore, a most critical period. A patient that has been doing well for several years may develop serious symptoms and quickly succumb. In others, growth and development are retarded without the immediate occurrence of grave symptoms. By far the greater number, happily, pass this period without serious inconvenience, outgrowing, so to speak, the valvular lesions.

In general terms it may be said that the prognosis of cardiac disease in the child is better than in the adult, but this is modified to a large degree by the surroundings and social condition of the patient. If he is ungoverned and unrestrained, permitted to indulge in violent games and exercises, is surrounded by unhygienic conditions, and subjected to exposure, the prognosis is very bad. While the favorable prognosis may be given, a positive statement should never be made; for no skill can foresee the numerous conditions that may arise to destroy the compensation.

THE MURMURS ACCOMPANYING HEART DISEASE IN EARLY LIFE.

Although the valvular murmurs accompanying cardiac disease are not to be taken as the only guide as to the severity of the condition present, they are very important, and their character should be determined in every case. The murmur of greatest frequency in children is the mitral regurgitant, which is

present, according to some observers, in at least 90 per cent. of all cases.

Mitral stenosis occurs with comparative frequency, and is of great interest both because of the peculiarities of its signs and symptoms and because of its serious nature. Pain is more common with this than with any other murmur, while bronchitis and coughs are constant and are very rebellious to treatment. The murmur is very slow in its development, and does not occur under the age of five years. Its diagnosis is important through its bearing upon prognosis, yet it is more commonly overlooked than any other murmur. It is usually harsh, rattling, or blubbering in character. In one important particular it differs from all other murmurs. The sound, instead of rising to a maximum and then gradually shading off into silence, rises rapidly to the maximum and suddenly ceases as the apex strikes the chest wall. When the regurgitant murmur is present, as is usually the case, the two sounds run so closely together as to be distinguished with great difficulty. The regurgitant murmur is transmitted to the left, while the area of transmission of the obstructive murmur is circumscribed. Hence, if the stethoscope be carried from the apex toward the left, the first portion or obstructive murmur suddenly ceases at a definite point, while the second or regurgitant portion continues unchanged. A thrill is not as common as in the adult, and may be absent in well marked cases.

Aortic obstruction ranks next in frequency to mitral regurgitation. Aortic regurgitation is the most infrequent left-side valvular lesion. It rarely, if ever, occurs alone in early childhood. Aortic murmurs are much more definitely associated with a rheumatic history than are the mitral, and indicate a more extensive endocarditis. Symptoms of heart disease are usually much more distinctive than when a mitral murmur alone is present. Dyspnœa is frequent, and with a double aortic murmur, dyspnœa and palpitation upon exertion are almost constant. Persistent anæmia is also common.

PERICARDITIS AS A FACTOR IN THE HEART DISEASE OF EARLY LIFE.

In a paper on rheumatic heart disease in children, read before the last meeting of the British Medical Association, an extended abstract of which is published in the *British Medical Journal*, Dr. D. B. Lees calls attention to the fact that a fatal result is not as a rule due to endocarditis. He admits that valvulitis is almost invariably present, as shown by *post-mortem* lesions, but he believes that in most cases it is a minor factor.

Pericarditis is certainly the most striking *post-mortem* phenomenon in such cases. It is undoubtedly true that pericarditis is an important factor in all cardiac disease. The facts presented by Dr. Lees unquestionably show that pericardial effusion in rheumatic fever is of much less frequency, amount, and importance than would naturally be inferred from the statements of the text-books, and that the disastrous effects of pericarditis are not produced by mere effusion of fluid. Most of the speakers who took part in the discussion coincided in this belief. Dr. Osler, who was one of those discussing Dr. Lees' paper, has in two papers recently published in this journal pointed out the grave importance of adherent pericardium in the heart disease of young subjects.

In endeavoring to understand how pericarditis kills, Dr. Lees calls attention to the necessity of examining the condition of the muscular wall of the heart. The visceral pericardium is really part of the heart itself; its interstitial connective tissue is continuous with that of the cardiac muscle, and the cardiac nerves, vessels, and lymphatics course in the subpericardial tissue. It is hardly possible for the pericardium to be inflamed without some damage to the superficial part of the cardiac wall. Careful observations are greatly needed to determine whether this damage is always appreciable by the microscope, how deeply it penetrates, and whether it is more intense in the neighborhood of the fibrous valve-ring than elsewhere.

An investigation of this kind, however, is difficult, and a

satisfactory result will probably not be attained without improvements in our present histological methods. Meanwhile, it is important to observe whether any gross changes in the cardiac muscular wall are revealed by *post-mortem* examination of fatal rheumatic heart disease.

Among 150 records analyzed by Dr. Poynton, in thirty-four, or 23 per cent., the existence of some morbid condition of the myocardium is specially mentioned. In thirteen of these it was soft and pale, in four fatty, in eight tough and fibroid. These statements suggest that if a careful microscopical examination had been made in each of these cases some evidence of myocardial change would have been detected in a considerable number.

Dr. Lees points out the fact that two important consequences may possibly follow from the injury to the muscular wall of the heart by the pericardial inflammation. The weakened cardiac muscle may be stretched by the internal blood pressure and the heart become dilated. Such dilatation, allowing a larger quantity of blood in the ventricles during diastole, will give the heart a harder task during systole, and may thus lead to hypertrophy. It becomes of interest, therefore, to ascertain whether these results are apparent in the *post-mortem* records. Among the cases analyzed by Dr. Poynton hypertrophy was found in fifty-eight, but special mention of dilatation was found in no fewer than ninety-two cases, and of these fifty-six were markedly dilated.

It is clear that dilatation is a much more common and striking phenomenon than hypertrophy in the hearts of children who have died from rheumatic heart disease. The conclusions to be drawn from this analysis seem to be that endocarditis and pericardial effusion have very little share in the production of the fatal result in the rheumatic heart disease of early life, and that the main factors responsible for the mortality and for a large part of the cardiac crippling in those who survive are pericarditis of plastic type and dilatation of the heart.

In examining clinically the heart of a child suffering from

rheumatism these facts should not be forgotten. Murmurs are of comparatively small importance in the immediate prognosis. The points which it is essential to determine are: evidence of pericardial friction, evidence of cardiac dilatation.

After study of the subject we must agree with the author that the prognosis in rheumatic heart disease in young children is not to be deduced from a consideration of the valvular lesions believed to be present, except in the very rare cases of advanced mitral stenosis; but that it must be founded mainly on three facts: the amount of cardiac dilatation, the presence or absence of pericarditis, and the evidence of fresh rheumatic toxæmia, as shown by attacks of sore throat, erythema, rheumatic nodules, arthritis, and chorea.

THE RIGHTS OF CHILDREN.

In a recent number of the *Cleveland Medical Gazette*, Dr. W. A. Knowlton asserts very forcibly that children have rights which the doctor is bound to respect. They have at least equal rights with adults to life and the pursuit of happiness. But they are helpless. They are dependent upon the good sense and discriminating judgment of parents, upon the honesty and skill of doctors in whose choosing they have no voice. The helplessness of childhood appeals to the conscience, the honor, the manhood in a doctor. The little ones are at his mercy. Will his conscience, will God forgive him, if through ignorance or neglect he is false to his trust?

Over 17 per cent. of all children born in England die in the first year, and over 25 per cent. by the end of the fifth year. Do we do any better here? A fearful responsibility rests somewhere. When the responsibility is divided between the parents, society, the civil authorities, and the doctors, what share lies at the door of the last? And then the crippled, the deformed, whose lives are blighted! Are any of these true witnesses of the culpable ignorance of general practitioners? And then the

large list whose inherited bad tendencies of body or mind might have been corrected by timely attention and advice. To know the child, the doctor must know the parents.

It is a wide field and calls for high powers of observation and deduction. In no department of medicine is more skill, judgment, honesty, and conscientious regard for duty demanded of the physician than in pediatrics.

Dr. Langford Syms, in the *Dublin Journal of Medical Science*, in referring to the significance of vomiting, calls attention to the fact that any undigested food in the stomach may produce vomiting. Reflex vomiting occurs in cerebral cases, the onset of eruptive fevers, pneumonia, whooping-cough, scarlet fever, tonsillitis, enteric fever, or intussusception. The vomiting of indigestion has *regular pulse*, full abdomen and diarrhœa, while that of brain disease has *irregular* pulse, retracted or scooped-out abdomen, and constipation. If the contents of the stomach are analyzed in these cases of dyspepsia, free hydrochloric acid is generally absent, whereas lactic and organic acids are usually present from fermentation, and the food will be found to lie unduly long in the stomach.

The Nature of Chorea.—Moncorvo, at the Académie de Médecine (*Revue Neurologique*), stated that it was so common to find in cases of chorea a family history of neurotic or alcoholic antecedents that there could be no doubt that these had some etiological influence; at the same time, chorea was closely related to certain infectious diseases, particularly rheumatism, and one was compelled to regard chorea as the result of the action of the rheumatic infection on the nervous system of a hysterical subject. The drugs which had proved useful in chorea were those which had proved useful in rheumatism—namely, antipyrin, exalgin, asaprol and analgen.—*British Medical Journal.*

Bibliography.

The Mental Affections of Children—Idiocy, Imbecility, and Insanity. By William W. Ireland, M.D., Edinburgh. *Formerly Medical Superintendent of the Scottish Institution for the Education of Imbecile Children.* London: J. & A. Churchill, 1898.

This work is based upon the author's former work upon idiocy and imbecility. It is, however, much more extensive than the original work in that it includes many new subjects and devotes more attention to many of those before considered. The most important of the new subjects are those which treat of the development of the brain in childhood, the pathology in genetous and paralytic idiocy, sclerotic and syphilitic idiocy, and the insanity of children.

The book is not only a personal exposition of the author's own beliefs, but it is also a comprehensive review of modern literature upon the subjects of which it treats.

In considering the causation of deficient mental development, the author lays great stress upon heredity, and teaches that the tuberculous diathesis is the most important single etiological factor. Among other causes he includes maternal impressions and frights.

In classifying these conditions the author mentions genetous, microcephalic, hydrocephalic, eclampsic, epileptic, paralytic, traumatic, inflammatory, sclerotic and syphilitic idiocy, cretinism, including the endemic and sporadic or myxœdematous forms, and idiocy by deprivation. He freely acknowledges that it is impossible in the present state of our knowledge to form a wholly satisfactory classification of these cases.

In discussing the sensory and mental deficiences of idiots the author considers with much detail several very interesting questions. He asserts that when idiots use words they do not use them through mimicry of sound, but to signify ideas; they either speak with a meaning or not at all. He cites instances in proof of this proposition.

Upon the very important subject of treatment, the author is judicious and very practical. He agrees with most other men of experience that after the earliest years the feeble-minded can be taught most successfully in private schools instituted for the

purpose. The home training of such children is liable to be unsatisfactory for many reasons. The author points out the very palpable fact that but little improvement can be expected in most cases, while but few who are classed as imbeciles can ever become self-supporting. He very wisely advocates general training in matters of every-day utility in preference to training of some special aptitude. The temptation to adopt the latter course is always strong, for the results are more perceptible and the work of education seems less discouraging. Such education is inclined to be, however, one-sided, and the knowledge acquired of little value. The ability to carry on the every-day routine of life is far more valuable than any single, highly-trained aptitude.

Transactions of the American Orthopedic Association. Twelfth Session, Held at Boston, Mass., May 17, 18, and 19, 1898. Volume XI. Philadelphia: Published by the Association. 1898. Pp. xxviii.—467.

The eleventh volume of this Society's Transactions maintains the high standard set by the previous volumes, which have for several years formed one of the finest volumes of transactions issued by any of the national societies. The present volume contains over fifty papers, many of them of very great scientific and professional merit. The illustrations are numerous and upon the whole extremely good. The papers cover the ground usually covered by orthopedic societies. Those upon forcible reduction of the deformity of Pott's disease are among the best that have been written upon that subject.

Addison's Disease in the Child.—Dezirot (*Thèse de Paris*), has collected fifty observations of this interesting disease in childhood. He finds that more uniformly in the child than in the adult Addison's disease is due to tuberculosis of the suprarenals. It is encountered at any age, even in the new-born. In its symptomatology, after asthenia and melanodermia, gastro-intestinal disturbance and convulsions are most common. The duration is relatively shorter in the infant than in the adult, and rapid or sudden death is a frequent termination. An accessory lesion often encountered is hypertrophy of the mesenteric ganglia and of the solitary and agminate glands. Treatment by orrhotherapy, up to the present time, has not given very satisfactory results.—*American Journal of the Medical Sciences.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, February 9, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

A TONGUE DEPRESSOR FOR CHILDREN.

DR. HENRY DWIGHT CHAPIN exhibited a new tongue depressor which he had devised to facilitate the examination of the fauces and throat in infants. He stated that much of the difficulty experienced in such examinations was due to the small opening, its obstruction by mucus, the gagging and vomiting of the patient, improper position and illumination and imperfect control of the tongue. If the first attempt were not successful, the second would rarely be. The nurse or mother having well secured both arms of the infant, and placed the latter before a window, if in the daytime, the physician should guide the head of the patient with his left hand and the spoon or tongue depressor with his right hand. At night it was better to use a candle, for a stationary gaslight did not afford the proper control of the direction of the light, as the little one moved its head quickly from side to side. The great faults of most tongue depressors were their large size and improper shape. The depressor which he exhibited was made quite small, and was curved forward, so that when its end reached the tip of the epiglottis the blade of the instrument would press forward the base of the tongue and control it perfectly.

DR. KOPLIK said that a common mistake in using such instruments was to pull forcibly instead of tilting the depressor.

THE BACTERICIDAL POWER OF BLOOD-SERUM IN INFANTS AND CHILDREN.

DR. HENRY KOPLIK gave a demonstration under the microscope of the bactericidal power of blood-serum in infants. He said that he had been led to study this subject somewhat because of the very rapid disappearance of the bacilli when testing for the Widal reaction, even with a serum that had been diluted sixteen times.

AN UNUSUAL CASE OF OPEN DUCTUS ARTERIOSUS IN A CHILD OF TWELVE YEARS.

Dr. E. Libman reported this case, which had occurred in the service of Dr. B. Scharlau, of the Mount Sinai Hospital. She had been a healthy, active girl almost up to the time of her first coming to the dispensary, six months before her admission to the hospital. Two weeks before coming under observation she had, for the first time in her life, expectorated some blood. There was no previous history of cyanosis or of ill health. She had several attacks of hemoptysis while under observation, or during the last few months of her life. At the time of entering the hospital, on May 26, 1898, she was suffering from profuse pulmonary hemorrhage. Physical examination revealed marked hypertrophy of the right ventricle of the heart, and an area of dulness, continuous with that of the heart, extending to the first and second intercostal spaces, and nearly to the median line. Over this area there were a systolic pulsation and bruit. The radial pulse was slightly diminished on inspiration, but this was more noticeable in the pulsation of the arteries in the lower extremities. There was a loud systolic murmur, transmitted in various directions, and audible between the fourth and sixth dorsal vertebræ posteriorly. There was also recurrent laryngeal paralysis. Her condition having improved somewhat, she left the hospital in August, but returned later with œdema, marked cardiac dilatation, and with a petechial eruption. The urine contained albumin and hyaline and granular casts. The autopsy disclosed the fact that the right branch of the pulmonary artery was occluded by a firm clot, and that the laryngeal nerve was caught tightly at the margin of the ductus arteriosus. There was also an aneurismal dilatation of the aorta, filled with a clot, and showing that at some previous time the blood must have passed from the pulmonary artery into the aorta. The pulmonary artery itself was atheromatous. The heart showed hypertrophy and dilatation, but no valvular lesions. Dr. Libman said that patency of the ductus arteriosus, without other defects of the heart, was quite a rare condition, only twenty-six such cases having been reported. Such a condition was not, however, incompatible with long life, for of these twenty-six recorded cases the oldest was sixty-six years, and one-half had lived until the age of puberty, or longer.

Dr. SHARLAU remarked that the child, whose case had just been reported, had entered the hospital in an almost moribund condition. The diagnosis during life had been congenital stenosis of the pulmonary artery.

DR. H. HEIMAN said that he had been impressed with the close resemblance of this case to one of aneurism; but aneurism in childhood was a very rare condition.

A CASE OF MULTIPLE ADENOMATA OF THE RECTUM AND ASCENDING COLON.

DR. FREDERICK KAMMERER presented a little girl from whom he had removed several adenomata of the bowel. She had come to him about eighteen months ago because of repeated rectal hemorrhages. Examination revealed a pedunculated growth about four inches from the anus. In the removal of this considerable difficulty was experienced in checking the bleeding. One year afterward there had been a return of the hemorrhages and mucous discharges from the rectum, and this time he found a similar growth, but somewhat higher up. Through an exploratory abdominal incision he had then exposed the sigmoid flexure and two separate tumors. The pedicles of these growths having been ligated, the tumors were removed, and then, by passing the whole length of the colon through the hands still another tumor was detected at the extreme upper end of the descending colon. It, too, was removed, and all the growths proved, on microscopical examination, to be adenomata. The mucous membrane of the bowel was in other respects normal. Dr. Kammerer said that he had previously reported the case of a girl of eighteen who had had hundreds of small adenomata. In that case he had done various operations, including resection of the sacrum and making an artificial anus. The first recurrence had taken place after closing the artificial anus, and she was still under treatment. The prognosis in the present case seemed to him rather more favorable because of the healthy state of the mucous membrane.

DR. F. HUBER referred to two other similar cases. In one, seen only six weeks ago, several adenomata had been present. In the other case, two tumors had been removed, at an interval of one year.

DR. THOMAS S. SOUTHWORTH said that these cases should serve to impress the lesson that a digital examination is demanded

whenever there are hemorrhages from the rectum. He instanced one or two errors of diagnosis coming under his notice that had arisen solely from a neglect of this rule.

DELORME'S OPERATION FOR CHRONIC EMPYEMA.

Dr. B. Scharlau read a paper on this subject. He said that the object of this operation was to remove the thick fibrinous masses from the pleura, and so give the lung an opportunity to expand. To this end he had advised that two or three ribs be resected, to give access to the pleural cavity, and that then the masses of fibrinous exudate should be peeled off. Dr. Scharlau said that six of the seven patients upon whom he had done this operation had recovered completely. The seventh had died, but the child had been suffering from scorbutus when first seen, and had died from this and not from the operation. His own method was to remove the soft parts with scissors, and then with heavy pedicle silk to ligate *en masse* close to the ribs, thus making the operation practically a bloodless one. By a gentle to-and-fro manipulation the exudate could be loosened from all over the pulmonary pleura, with the exception of a few small areas, where some cutting would be required. Although in one of the cases the lung had been torn superficially, this accident had not been followed by any bad results. It was, of course, possible that in very old cases it might not be practicable to remove the exudate without laceration of the lung, but so far he had not encountered such a case.

Dr. Willy Meyer expressed the belief that the safest and best method of treating empyema in children was by resection of the rib and removal of the fibrinous masses, for the reason that nature did not always seem able to secure proper expansion of the lung unaided. One method of aiding her was by teaching the children to blow colored fluid back and forth through tubes from one bottle to another. If the attendant expiratory effort were not sufficient, it could be increased as desired by raising one of the bottles. Of the various operative procedures prior to the one under discussion, he favored Estlander's, from which he had obtained better results than from the very formidable one of Schede. To Delorme should be given the credit of having first diverted the attention of surgeons from operative procedures on the thoracic wall to the pleura. The very excellent results ob-

tained by his method should make it the very first radical operation in cases of chronic empyema. If it should fail, it was still possible to do Schede's or some other operation.

Dr. Huber said that although he had done about one hundred operations on cases of empyema in children, he recalled only two instances in which a second operation had been demanded. It was true that he had seen more acute than chronic cases, but he felt confident that if incision of the thorax, with the insertion of a large double tube were resorted to early in all cases of empyema in children, but few of them would become chronic. Most of his cases had terminated in about six weeks. He preferred to operate without giving an anæsthetic, because the crying of the child favors the discharge of the pus and masses of lymph.

Dr. William H. Thomson advised that a bacteriological examination be made of the first pus drawn in all cases, as upon the result would largely depend the prognosis. In the streptococcus variety of empyema, he said he would not hesitate to recommend prompt incision and resection of the rib, while he had known cases of empyema due to pneumococcus infection to recover after simple aspiration. Estlander's operation was exceedingly severe, causing dangerous shock even in adults. Apparently the operation of Delorme was a decided step in advance, but he would welcome any procedure which would prevent the formation of permanent sinuses, and the subsequent amyloid change. Incidentally he remarked that this amyloid was not a degeneration, but an infiltration with new material, and that, therefore, recovery from it was possible.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Meeting of December 16, 1898, and January 20, 1899.

A. B. Judson, M.D., Chairman.

TUBERCULOUS KNEE AND ATHETOSIS.

Dr. Royal Whitman presented a girl ten years of age who had been under observation for nine years. When one year old and under treatment for disease of the right knee she had a convulsive attack which was followed by right hemiplegia. The

return of voluntary power was accompanied by constant convulsive movements of the face, arm, and leg which had continued to the present time and had made treatment of the knee a matter of great difficulty. In spite of splints, traction and plaster of Paris bandages the convulsive movements of the leg had caused severe pain and prevented repair, so that the local disease was still uncured. But for the youth of the patient, amputation would have been done. The case illustrated the advantage and necessity of rest in the conservative treatment of joint diseases.

A CASE OF DOUBTFUL DIAGNOSIS.

Dr. Wisner R. Townsend presented a boy eleven years of age who fell from a car three months ago and had complained of pain in the left hip ever since. Six weeks ago when he was first seen there was symmetry in all the measurements of the lower extremities but the affected hip showed considerable resistance to motion in any direction, which could sometimes be partly overcome by persuasion and considerable force. Manipulation was painless. He stood and walked with the left foot, leg and thigh everted or rotated outward 90 degrees and this persisted. By the use of considerable force the limb could be rolled in, but when released it flew back to its old position. Every muscle reacted perfectly to galvanism and faradism. Tincture of iodine had been used locally and his locomotion had improved a little. A probable diagnosis of hysteria had been made by exclusion and because he could with effort stand and walk voluntarily in a normal manner and because the bad position could be overcome by a steady pressure and without causing pain.

Dr. Whitman said that a faulty position of a limb in an impressionable patient might be considered as a voluntary or unconsciously selected adaptation to some condition following strain or other injury of a joint.

Dr. Townsend said that the statement had been made that injury of the obturator nerve had in some instances caused a similar eversion but he had not found any recorded cases.

CICATRICIAL CONTRACTION OF THE HAND.

Dr. Samuel Lloyd presented a little boy with cicatricial deformity of the right hand, the result of burns received a year ago. About six weeks ago the little finger, being very much

twisted and distorted, was amputated and superficial tissue was removed from the remaining digits. To replace the cicatricial tissue with normal skin a flap including a little of the fatty tissue was partially dissected from the abdomen, being attached at the top and bottom. Under this the boy's hand was slipped and a plaster of Paris bandage was applied. This being removed the attachment of the fingers to the abdomen was very well shown. At a later stage the flap would be entirely detached from the abdomen. There had been no suppuration.

SECONDARY PULMONARY OSTEO-ARTHROPATHY IN A CHILD.

DR. WHITMAN presented a girl eight years of age, rather undersized but in fair physical condition. There was moderate kyphosis and rigidity of the spine, the result of Pott's disease of the tenth dorsal vertebra, accompanied by an abscess in the left iliac fossa, for which she had been treated by the application of a plaster of Paris jacket in 1893 when she was two years old. The abscess disappeared and the patient was recovering favorably till 1896 when persistent cough and expectoration followed an attack of whooping-cough. In 1897 enlargement of the fingers was noted, the gait was feeble and shuffling, and there was pain in the knees and ankles with exaggerated patellar reflex and ankle clonus and marked effusion into the knee and ankle joints. The terminal phalanges and the nails were enlarged and there was cough with abundant expectoration and râles at the apex of the left lung.

In 1898 the pain was relieved by the anti-rheumatic administration of salicylate of soda and although there was a marked general improvement the swelling of the knees and ankles persisted and the increased clubbing of the nails had attracted much attention and was thought to be an instance of the so-called hippocratic fingers, due to obstruction of the circulation caused by disease of the lungs. Expectoration was moderate in amount and bacilli were not found.

In October, however, an examination showed thickening and enlargement of the bones of the lower arms and sensitiveness to pressure and swelling of the wrist joints. This made the diagnosis clear and at once connected the clubbing of the fingers, the arthritis and the enlarged bones as symptomatic of the affection known as secondary pulmonary hypertrophic osteo-arthropathy. The child was found to have no psoas contraction

or other trace of abscess and there was apparent recovery from the disease of the spine. There was slight dulness at the apex of the left lung and increased respiratory sounds at the base of the right. The most marked peculiarity was the great size of the hands as compared with the size of the child, and of the lower arms and legs as compared with the upper segments of the extremities, giving the impression of atrophy of the thighs and upper arms. The bones of the legs and forearms were sensitive to pressure. The knees, ankles and wrists were enlarged by an effusion into the joints and by thickening of the surrounding parts without redness, heat or muscular spasm. Motion was very slightly limited. The digits were thickened and their terminal phalanges remarkably enlarged with nails rose red in color but not especially thickened or curved. The circumference of the ends of the fingers and the breadth of the nails were about twice as great as normal. This condition was somewhat less marked in the feet than in the hands.

The affection of the bones in this disease appeared to be a form of malacia in which the organic material is somewhat increased and the mineral substance correspondingly diminished so that the structure of the bone is weakened. The characteristic change in a deposit of new bone beneath the periosteum of the shafts of the phalanges, the metacarpal and metatarsal bones and the lower part of the bones of the lower arm and leg with local sensitiveness, sympathetic arthritis and clubbing of the ends of the digits and hyperthrophy of the nails. The affection had been first described in 1888 by Bamburger and independently by Marie who differentiated it from acromegalia with which it had been confounded. In practically all of the cases reported, upward of eighty in number, it was secondary to chronic disease of other parts; in 75 per cent. to tubercular or suppurative disease of the lung or its coverings. The cause of the periosteal and other changes was supposed to be the absorption of irritating substances from the focus of suppuration in or about the lung, combined with impaired circulation. Thus the first evidences appeared in the ends of the fingers. It was a rare disease and this was believed to be the first typical case reported in a child.

Dr. H. E. Pearse, referring to the great increase in the size of the bones, called attention to the fact that the radiographs

showed that the enlargement was longitudinal as well as transverse.

Dr. A. M. Phelps said that he had been impressed with the remarkable bony enlargement. A *post-mortem* examination of the brain and cord would be of great interest. Acromegaly was due to a tumor or growth in one of the ventricles of the brain and he questioned whether or not in the case presented there was a central lesion due to poisoning from the diseased area. The lungs had not been sufficiently involved to cause obstructed pulmonary circulation. In tabetic joints there was destruction of bone from a central lesion and cases of rheumatoid arthritis might perhaps have a similar origin and not have been rheumatism at all. He doubted whether such a thing as a simple rheumatic joint existed. They were always multiple.

Dr. R. H. Sayre said that the pathological views presented were not entirely convincing. It was not clear why proliferation of the periosteum should visit the phalanges rather than other parts of the skeleton. In a patient affected with a tubercular knee joint the radiograph had shown a very marked proliferation of the periosteum of the lower end of the femur and there were marked clubbed fingers. The patient had the appearance of a consumptive in whom the destruction of the lung was far advanced but her lungs showed no change. In another patient there was the same condition of the fingers which were more tender some times than at others. Movement greatly aggravated the inflammation and nothing gave relief but absolute rest.

Dr. H. S. Stokes said that the etiology was far from being established, as might well be in a disease that had been recognized for only eight or ten years. It had not yet been positively determined even that the condition was dependent on disease of the lungs. If it were, why did it not occur more frequently? In the absence of the characteristic bacilli it was not certain that the child presented had tuberculosis. In view of her history it would not have been strange if her general condition had been worse. It was almost impossible to make a diagnosis of lung affections in children with deformed chests. He had seen a specimen of kyphosis from a case in which the diagnosis of tuberculosis of both lungs had been made and yet at the autopsy the lungs had been found to be normal. Similar cases were not uncommon.

Dr. G. R. Elliott said that if speculation were in order he would agree with Dr. Phelps that the cause of this rare condition was to be sought for through the central nervous system. There was reason to believe that the cause of various distal bony changes and peculiar vascular phenomena presented by the distal extremities, including great sensitiveness, together with certain well-marked types of so-called osteo-arthropathy were traceable to central lesions. In the patient presented there were clinical and X-ray evidences of a disturbance of the normal equilibrium between the bone producing and organic producing cells leading to the enlargement. The signs were bilateral and symmetrical evidences of central irritation. To say that such a condition was associated with a chronic disease meant very little; to say that it was circulatory was untenable. He believed that the explanation would be found in this—that the trophic and vaso-motor cells had been thrown off the track by some poison, be it tubercular or other, circulating through the central nervous system, selective in its nature and degenerative in its final expression.

Dr. Stokes said that in the five or six autopsies which had been made, no nerve lesions had been found in spite of careful and thorough examination.

Dr. Elliott said that that was true of other diseases which were considered to be due to central nervous lesion.

Dr. Whitman said that many cases of osteo-arthropathy were probably not true examples of the disease in question. In many the only change observed was clubbing of the fingers which was sometimes seen in cases of simple obstruction of the circulation, described by Hippocrates as a symptom of advanced phthisis and not very uncommon in cases of empyema of long standing. One fact had been established, *viz.*: that hypertrophic osteo-arthropathy was practically always secondary to some chronic disease, in the case presented, for example, to Pott's disease and chronic bronchitis. Speculation as to its cause would seem to be less important than further and more careful descriptions and classification of cases.

CYST OF FEMUR, DOUBLE COXA VARA.

Dr. Whitman presented a boy eleven years of age with evidences of femur rhachitis and the usual signs of double coxa vara. For several years he had complained of discomfort and

pain in the left hip and thigh, the pain at times being severe, especially after exertion. When about five years of age he was treated by a physician for eighteen months for supposed hip disease, and a year later, by the application of a plaster jacket for spinal deformity. On September 8, 1898, an operation was begun for the correction of the deformity of the femora by removing wedges of bone from the trochanters. On removing the periosteum from the upper end of the left femur a peculiar dark color and a somewhat reticulated appearance of the bone were noticed, and at the first touch the chisel broke through the brittle cortex and entered a cavity from which spurted a quantity of serum of the color of prune juice. The cavity was of the size of a hen's egg, its base being shut off from the medullary cavity of the diaphysis by a cone-shaped projection covered apparently with cartilage. Its upper extremity reached about half way to the apex of the trochanter. Its walls were lined by a smooth, fibrous covering, which bled freely on manipulation. As it was feared that the inner part of the femur was weakened by the cyst, and as it was evident that union in case of fracture would be doubtful, to restrain hemorrhage the cavity was simply packed with gauze, which was removed at the end of four weeks, and the boy began to walk about. The sinus closed one month later. It was evident that spontaneous fracture, as in other cases of coxa vara, could not have been long delayed.

If the symptoms should recur, a second operation for the removal of the walls of the cyst would be indicated. Cysts of the femur were usually found at the extremity of the diaphysis, most often at its upper extremity. A diagnosis before operation had not been recorded. They were said to be the result of softening or transformation of an originally more solid growth of a cartilaginous or fibro-cartilaginous nature, probably a displaced fragment of epiphyseal cartilage.

Dr. Sayre had examined the boy two or three months ago. As he had not offered to operate, the patient passed out of his care. At that time he had taken a radiograph of the hips and had observed a spot on the femur which might have been the cyst.

VALUE OF RADIOGRAPHS.

Dr. T. H. Myers said that he had tried, but usually in vain, to detect abscesses, tubercular foci and other lesions in the bones by means of skiagraphy. In a case of abscess of the head

of the tibia an area of diminished density at the site of the abscess had been clearly revealed, with increased density about it, similar to the contrast seen between the centre and the periphery of a long bone in any skiagraph.

Dr. Phelps said that a radiograph would usually show a shadow where there was a lesion, but it could not tell what it was. He had been deceived by pictures taken by good machines and had cut down upon lesions which did not exist. It was not possible to diagnosticate lesions of the soft parts by means of radiography, but if an abscess was known to exist it would aid in locating it.

POTT'S DISEASE—DEATH CAUSED BY AN ABSCESS IN THE THORAX.

Dr. Whitman also related the history of a boy four years of age who, with an angular projection at the fourth dorsal vertebra, was subject to occasional prolonged asthmatic attacks of such severity that fatal asphyxiation seemed to be imminent. The character of the dyspnœa seemed to warrant a diagnosis of abscess pressing upon the trachea. A plaster jacket and jury-mast were applied with good effect, and a month later the jacket was removed for the purpose of examining the chest more carefully, but the symptoms of dyspnœa, caused apparently, in part by the removal of the support and in part by the recumbent position, became so urgent that it was immediately re-applied without further examination.

The boy died suddenly that evening. The internal organs showed no sign of disease. On removing the lungs and heart a tense fluctuating tumor was apparent in the median line, the size of a large hen's egg, between the œsophagus and the anterior longitudinal ligament, on a level with the upper border of the third dorsal vertebra, its apex at the sixth dorsal. The abscess contained about two ounces of purulent fluid. It appeared to have escaped from behind the longitudinal ligament into the retro-œsophageal space at about the time of the greater obstruction of breathing, or about six weeks before death. The greatest projection of the tumor was opposite the third vertebra where it was forced forward by the spine above the collapsed vertebral body, against the trachea near its bifurcation. An abscess obstructing the respiratory passages in the upper cervical region could be reached and evacuated, but within the chest walls its diagnosis and treatment were not easy. The significance of

what might be called asthmatic breathing as distinguished from the embarrassed respiration symptomatic of Pott's disease in this region should be borne in mind. If the abscess were large and could be percussed posteriorly costo-transversectomy would be indicated. But in this case there was no dulness on percussion, and the small abscess lay at a distance of three inches from the exterior of the body, so that it was probable that the large opening of so-called posterior thoractomy would have been necessary, a justifiable operation if the difficulties of diagnosis could have been overcome.

Dr. Phelps recalled two cases in which the abscess had ruptured into the lung, but in neither did suffocation, which had caused death in Dr. Whitman's patient, occur. On the other hand he had seen cases of cervical disease in which the abscesses had ruptured into the pharynx and caused suffocation. When the abscess was high enough it should be opened the very moment it was detected by an external incision for it might rupture during sleep at any time and, if the patient did not suffocate, he would die later of tuberculosis due to infection of the lung.

Dr. Judson said that the walls of the trachea were not easily compressible except by force, as by the grasp of a strangler or the hangman's rope. When a foreign body in the gullet produced suffocation it was from spasm of the glottis and not from compression of the trachea. At the level of the third dorsal vertebra, however, the trachea occupied, together with the œsophagus and the deep cardiac plexus of the sympathetic nerve, a narrow strait bounded behind by the vertebral bodies and in front by the upper piece of the sternum and here, if at any point, its lumen might be diminished by the pressure of a fluctuating tumor. Above this level and below, where the anterior and posterior walls of the thorax diverged, no such pressure was likely to occur. It was not uncommon for abscesses, as in Dr. Whitman's patient, to occupy this critical position. The conservative tendency of cold abscesses to move where there was least resistance often perhaps prevented interference with the vital function of the trachea. He suggested that the fatal result might have been due to spasm of the glottis following the passage of a part of the contents of the abscess into the trachea or to some interference with the cardiac plexus.

Dr. Taylor was reminded of a case of Pott's disease reported by Dr. W. R. Townsend in which the abscess was in

this region. An unusual form of dyspnœa was a feature of the clinical history and the child died suddenly a few days after admission to the hospital. A rather small abscess which had not ruptured was found in front of the spinal column at the root of the neck. It was supposed that suffocation had been due to some traction upon the nerves rather than to pressure.

Dr. Myers recalled, and continued, the history of a boy seven years of age, who was before the Section on March 18, 1898. The abscess had burrowed forward into the neck from the fifth dorsal vertebra and discharged behind the right sterno-mastoid. The evening temperature rose 2 degrees when the boy was allowed to be up and was normal when he was kept recumbent, in which position the drainage was free. He had therefore been kept in bed for two months after which his general health was entirely restored and the sinus remained closed for several months. He had, however, returned with a profuse recurrence of the discharge, an enlargement of the post-cervical glands on the right side and an abscess over the manubrium, but with no rise of temperature. An irrigating fluid passed from the old sinus out of the pharynx by a passage which was open for a month, but which had been closed for four weeks. It was a question whether one of the abscesses perforated or whether one of the cervical glands ruptured and discharged.

Dr. Judson recalled a case in which, during the progress of purulent hip disease, an abscess over the manubrium turned out to be from caries at the junction of the upper and middle piece of the sternum. There was spontaneous rupture externally, consolidation, a scar attached to the bone and recovery with angular deformity, anterior instead of posterior as in Pott's disease. The angle formed by the manubrium and the gladiolus measured more than 25 degrees. The sinus had closed seventeen years ago. Recovery from the hip disease had been very favorable and the caries of the sternum had left no inconvenience.

Dr. Homer Gibney said that it was reasonable to believe that abscesses occurred as often with disease of the upper dorsal region as of the cervical, but they were not so easily detected in the former and were too often overlooked.

Dr. Whitman said that in the case reported by him the abscess had not ruptured, it was strictly confined to the retro-œsophageal space in front of the spine. There had been no change in voice or difficulty in swallowing. An abscess in this

region was a direct menace to life, the dangerous symptom being attacks of inspiratory dyspnœa. It is probable that an operation would have saved life in this case.

AN ALUMINIUM CORSET.

Dr. Phelps exhibited an aluminium corset for the treatment of spinal disease. He had experimented largely with various materials, such as sole leather, celluloid, wood, etc., and considered this material, which was light, clean, able to keep its shape and durable, as the best that he had found for the purpose.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, February 14, 1899.

Edwin E. Graham, M.D., President.

AN EASY METHOD OF MILK MODIFICATION.

Dr. H. M. Shriner read a paper upon this subject, and described his method of modification.

Dr. Edsall—I think it is well to direct attention to the fact that we are in many cases, particularly when dealing with poor dispensary patients whose milk is always of uncertain quality, calculating upon too high percentages. This is especially the case with the proteids. The amount of fat is a simpler question, because cream is commonly used, and there is more variation in the actual amount of cream than in its percentage of fats when it is obtained by the same method of separation. But the proteids must be reckoned blindly in ordinary work, and they vary to a very large extent, sometimes almost 100 per cent. In doing metabolism work I have made daily estimations of the proteids of the milk from one dairy for as long as two months, using the Kjeldahl method for nitrogen. In that time the milk sometimes varied within twenty-four hours from 4.1 per cent. of proteids to 2.7 per cent., rising on the following day to 4 per cent. once more. Such variations occurred even in the winter time when the cattle were upon a regular fodder; in the spring, especially when they are fed largely upon fresh grass, the daily variations are so great that calculations based upon any fixed percentage are very uncertain; but it will almost always be found that the proteids are below the commonly accepted 4 per cent. The variations in the amount of fat in the milk itself

are quite as great, though, as I have said, they are of less importance as a rule, because the fats are obtained chiefly from cream. I have, however, seen the fats of milk vary in a series of daily estimations from 3.2 per cent. to nearly 6 per cent. I have no desire to question the value of Dr. Shriner's method of calculation, and simply wish to emphasize the point he made, that the percentages of proteids and fats commonly used as the bases of calculation are in most cases likely to be too high.

Dr. Thompson S. Westcott.—It may be interesting to observe that the method of calculation suggested in Dr. Shriner's paper is the same as that which has long been used by the Walker-Gordon laboratories. Any method of calculation involves the application of the same fundamental arithmetical principles, which are quite simple. Dr. Shriner is to be commended for independently reaching the results he has presented, but I doubt whether the members of the Society will consider this method simpler or more readily applied than several other methods that have recently been suggested.

Dr. Shriner.—I would say that I have selected these percentages as standards; any percentage can be taken as standard, and worked out by the same rule.

THE "MATERNA," A NEW APPARATUS FOR THE HOME MODIFICATION OF MILK.

Dr. J. P. Crozer Griffith exhibited "The Materna," a new and simple apparatus for the home modification of milk, designed by a New York dealer in glassware and surgical apparatus. It consists of a glass graduate so marked that by putting into it the different ingredients of a milk mixture, up to the different horizontal lines cut in the glass, mixtures of different percentage strengths can very readily be produced. He recommended the apparatus highly, as it costs but little and saves much trouble.

Dr. Miller.—It seems to me that this apparatus is very valuable because of its simplicity. I have found that the percentages of ordinary cream are so uncertain that it has been my custom in home modification of milk to direct parents and nurses to adopt the gravity method, *i.e.*, to allow milk to stand varying periods of time, and then take off varying quantities of the upper layer and mix that with varying quantities of sugar and water. This has seemed to me a simpler method and to answer

all purposes. This apparatus would simplify that method still further, and, it seems to me, would be a very valuable addition to our armamentarium. This brings up the whole question of modification of milk. I believe, as Dr. Jacobi has so long taught, that the simpler a method of feeding is the more successful it is likely to be. The home modification of milk is utterly impossible among the poor. They cannot get the cream, often not even the milk, nor can they keep them fresh. Thus, it seems to me, the older method of mixing milk with barley water and sugar is a good method, directing always that the milk be boiled. But for those who can afford to use the laboratory, it has been a wonderful addition, and the means of saving infant life and preventing disease.

Dr. Westcott.—When Dr. Griffith showed me the apparatus I hastily worked out several formulæ and found that in order to make the required percentage of fat a 20 per cent. cream with a 4 per cent. milk was necessary. If they were used the result was quite accurate. The proteids were practically exact within a few hundredths of one per cent. It is rather difficult, as Dr. Griffith has said, to get a 20 per cent. cream, and it seems to me that the apparatus would have been of more general utility if it had been graduated on a basis of 16 per cent. cream, which can be very readily obtained at any of the laboratories and more nearly approximated by an ordinary fairly rich cream from a common dairy.

Dr. Griffith.—I spoke somewhat incorrectly when I referred to the use of 20 per cent. cream in the apparatus. The circular which accompanies it calls for skimmed cream, which cannot be expected to average more than 16 per cent. The measurements on the graduate, however, clearly demand a 20 per cent. cream. The correction on the circular is about to be made by the makers. For myself, in prescribing a milk mixture, the method I prefer is to work out the desired percentages and quantities just as they are needed, without any special apparatus. There are many physicians, not constantly calculating milk mixtures, who will find this difficult, and for such this apparatus is really a boon.

As originally made it was marked with certain weeks and months indicating the age at which food was to be changed to a stronger mixture. I have felt this to be a distinct mistake,



SKIAGRAPH OF THE LOWER EXTREMITIES OF AN ECTROMELUS EXHIBITED BY DR. R. A. CLEEMANN.

since it places unwisely too great a power in the mother's hands. It is wrong to teach the laity that a child's food is to be increased in strength just because it happens to be three months or six months old. This is a very arbitrary plan, and capable of doing great harm in unskilled hands. The makers of the apparatus have therefore agreed to construct one model of it without such markings for different ages.

DR. E. E. GRAHAM.—Is this absolutely correct? For instance, if you fill the graduate to a certain distance with the specified proportions of water, cream, milk and sugar, will it work out, according to the percentages given; are you sure that it is correct?

DR. GRIFFITH.—In answer to Dr. Graham's question I would say that all the markings are scientifically accurate, and that each glass is tested before it is put on the market.

SKIAGRAPH OF THE LOWER EXTREMITIES OF AN ECTROMELUS.

DR. R. A. CLEEMANN exhibited a skiagraph of the lower extremities of an ectromelus and made the following remarks:

"At a recent meeting of the Society I reported a case of ectromelus which had occurred in my practice. I described the monster as wanting the femur on either side, but you will see from this very satisfactory skiagraph of the lower extremities, for which I am indebted to Prof. H. Augustus Wilson, that it is the bones of the legs that have failed of development and not the femurs. There is discernible but one bone in each extremity from the pelvis to the foot, and this bone bears the shape of the femur. The head can be made out in proximity to the pelvis and below the contour is like that of the condyles, though it also resembles the trochlea formed by the two bones of the leg; below the distal extremity are two centres of ossification which I take to be in the astragalus and os calcis respectively, such as we might expect at this period of the child's development. The skiagraph is an excellent example of what we may learn through the Roentgen ray before death allows us the opportunity of dissection; an event which may not occur in this case until late in adult life."

Current Literature.

HYGIENE AND THERAPEUTICS.

Kerley, Charles G.: The Management of Acute Gastro-intestinal Infection in Infants. (*New York Medical Journal.* 1898. Vol. lxviii., No. 4.)

The first point to be realized in the management of acute gastro-intestinal infection or acute summer diarrhœa is that it is the contents of the intestines which demand our attention.

Accepting the fact that we have primarily an infection, a poisoning process to deal with, the management is plain. We have the entire gastro-intestinal tract involved, containing pathogenic organisms which it must be our endeavor to remove and the field of their activity rendered as inhospitable as possible.

To bring this about, the use of certain drugs is indispensable. Equally important to the medication is the diet. The food must be of such a nature that it will be absorbed largely by the stomach, and that it will not furnish a culture medium in the intestinal canal.

With the onset of the attack one grain of calomel is ordered to be given in divided doses of a sixth of a grain every thirty minutes, if there is no vomiting. If this symptom is troublesome, it will be advisable to give from a thirtieth to a fortieth of a grain every fifteen minutes until the desired amount has been given. The calomel is indicated for the cathartic effects, the washing out of the intestines, and for its stimulating influence upon the secretory function of the liver. When a decidedly prompt cathartic action is required in those cases where there are marked prostration and infrequent foul stools, an initial dose of castor oil is to be preferred to the calomel.

The most important step in the management of our summer cases must also be brought into operation early in the attack. The milk diet must be stopped at once, whether nursed or bottle fed. It may not be necessary to discontinue it for longer than twenty-four hours. In other cases it is not only unwise but positively dangerous to allow cow's milk until two or three weeks have elapsed.

If the patient is not promptly relieved, the further progress of the illness may mean an involvement of the intestinal structure. It is well to remember in this connection that one of the first principles in the treatment of any diseased organ is rest.

This the milk will not allow, the greater part of it fermenting and passing undigested the entire length of the intestinal canal, acting as a local irritant and exciter of peristalsis in addition to furnishing a means for the development of bacteria.

The author feels that he can speak positively regarding the disadvantage of a milk diet in summer diarrhœa. An uncomfortably large percentage of the infants who furnished his 215 autopsies were either put on a *sick* diet of completely sterilized milk or peptonized milk. The majority of these patients were the inmates of an institution for children in which he held a prolonged interne service. The profession had just taken up sterilized milk. The longer it was sterilized the better it was supposed to be. It was the custom to sterilize from one to three hours, thus procuring a highly indigestible food—and a high infant mortality.

Since bringing into use the measures suggested in this paper, his death-rate from intestinal derangements in out-patient and private sources has been reduced to a minimum. Upon suggesting that the milk diet be temporarily suspended, many mothers will appear considerably surprised, and maintain with pride that the child is fed on *sterilized* or more or less peptonized milk.

An explanation that no process could make milk suitable for the patient, and that the entire abstinence will probably be but of a few days' duration at the longest, will always be kindly accepted and adhered to.

The patient may be given cool boiled water to drink freely, providing there is no vomiting. If there is vomiting, it may be allowed, depending, of course, on the ability of the patient to retain it.

The diet allowed consists of barley water, the barley being cooked three hours; wine whey—half an ounce of sherry wine to ten ounces of whey; liquid peptonoids, a drachm every three hours; weak albumen water—white of an egg to a pint of boiled water; beef juice, diluted, one part in twenty-four of boiled water. These are the preparations commonly selected. Others are given for special cases. To the egg water and barley water it would be well to add a little salt, which will remove the insipid taste, or one drachm of the liquid peptonoids may be added to each feeding.

Written directions concerning the preparation of the foods and the feeding must be given in every case. It is not well to

select one food and use it to the exclusion of all others, as the child will soon tire of it. It is far better to make two or three preparations and alternate them. Care must be exercised in giving the egg mixture, as some children fail to digest it. It will be well to precede its administration with a grain or two of pepsin. It should not be given oftener than twice in twenty-four hours, at considerable intervals.

If vomiting is troublesome, it may be necessary to reduce the food to a minimum for a day or two, one or two teaspoonfuls every half hour. In other cases only water in teaspoonful doses will be borne by the stomach. Others will only retain a few minims when it is given by a medicine dropper. In some a period of absolute rest for the stomach, from twelve to twenty-four hours, will be required. These means, with one or two stomach washings daily, will fail in comparatively few cases. In these few, gavage may help us out. When all of these means fail, the vomiting will usually be found due to brain complication. The use of drugs administered by the stomach in vomiting is extremely limited. The hypodermic use of morphine in selected cases is of considerable value, but its use is not to be generally advocated. If there is little or no gastric disturbance, the diet may be given in quantities corresponding to the amount given in health.

Closely following upon the administration of the calomel and change in the diet, the following prescription, or some modification of it, is ordered:

Bismuth subnitrate (Squibb) . . . 12 to 20 grains;
Bismuth salicylate . . . . . 1 grain;
Water . . . . . enough to make 1 drachm;
Aromatic tincture of rhubarb . . . 1 to 2 minims.

This is given hourly, (twelve to twenty grains of bismuth to a child one year old).

The limit to bismuth subnitrate (Squibb) is twenty grains hourly. This drug, when given frequently in large doses, combined with a small amount of bismuth salicylate, one or two grains, will give most satisfactory, and many times astonishing, results. Small doses are without value. It is to be given when the discharges are serous as well as when there is mucus present. The only contraindication is pronounced inactivity of the bowels or when it is not well borne by the stomach, both of which conditions being rarely met with. The aromatic rhubarb makes the combination very agreeable.

If, twelve hours after bringing into use the calomel, the diet, and the bismuth compound, the stools are very frequent, Dover's powder is given, a fourth to half a grain two hours apart, to a child from six months to one year of age. The Dover's powder is given not to stop the diarrhœa, but to control the excessive peristalsis and relieve pain.

If the case is a particularly active one of several days' duration when first seen, with frequent stools, the Dover's powder is given at once. The opium must be given according to the symptoms, and must be discontinued when the stools are reduced to three or four in twenty-four hours.

There are few questions met with in pediatrics which require a more careful exercise of judgment than the matter of opium administration in summer diarrhœa. If we give too much, we poison the patient—not opium poisoning, but by locking up the bowels we produce high fever, prostration; in short, sepsis. We must maintain free drainage, at the same time giving enough of the drug to check the excessive peristalsis, to prevent the excessive loss of fluid, and to relieve pain, or we shall lose our patient.

Irrigation of the colon is practiced by the author in every case coming under observation, if it promises any degree of severity. A solution of 1 per cent. boric-acid or normal salt solution is ordinarily employed. If the amount of mucus in the stools is large, or if there is blood in any degree, 1 per cent. tannic-acid solution is used instead. It will rarely be advisable to use the irrigation oftener than twice daily; when practiced too frequently, the manipulation with the tube may act as an irritant to the mucous membrane of the rectum and sigmoid. Two quarts of the solution suggested will usually be all that is required.

For irrigation, a soft-rubber catheter, No. 14 English, is attached to a fountain syringe, the bag of which should be held three or four feet above the patient's body. The child must lie on the back or left side, with legs well drawn up. The tip of the well-oiled catheter is passed into the rectum. When an introduction of two inches has been effected, allow the water to pass in slowly. The water will distend the parts and facilitate the further introduction of the tube. Press the folds of the buttocks together until the colon is filled. This in a child eighteen months of age will require twenty-four to thirty ounces of water. When this or a lesser amount, at least one pint, has

passed in, allow the solution to run in and out at the same time. The temperature of the solution should range between 95° and 100° F., except in cases of high fever, when it may be used as cold as 60° F. When the child is moribund or an athreptic, with a low temperature and low vitality, hot water acts as a decided stimulant. It is not advisable to introduce the catheter into the bowel farther than nine inches.

Upon resuming the milk diet, which must only be allowed when the stools approximate the normal, great care is required that it is not given freely to the child. If he is given the regular milk diet at once, a relapse will almost always result. At first but half an ounce should be added to each feeding of barley water. The milk may be increased half an ounce every day or every other day until the customary strength is reached. In the breast-fed the attack is usually not very severe and the period of abstinence of short duration. Nursing can often be resumed in twenty-four to forty-eight hours. During the interval when the child is not nursing the breast pump must be employed at the regular nursing periods.

The Colony System for the Treatment of Epilepsy. (*Eighth Annual Report of the New Jersey Training School for Feeble Minded Children.*)

A commission appointed by the State of New Jersey to investigate the subject of the care and management of epileptics favors strongly the colony system and mentions the following reasons, which have led to this conclusion:

First.—For the welfare of the epileptics, whose numbers justify the outlay.

Second.—For the welfare of the insane who should not be compelled to associate with them in the hospitals.

Third.—To diminish, so far as possible, the overcrowding of the hospitals for the insane.

Fourth.—To remove the epileptics from the almshouses, where it is a hardship for many of them to be, as, under favorable circumstances, they would be able to work, and might be restored to health.

The benefit that must accrue to epileptics in particular, and society in general, would be very great; and scores, if not hundreds, who now refuse to enter the dark portals of the hospital for the insane, or the forbidding gates of the school or institu-

tion for the feeble-minded, would be glad to enter the "home" or "colony" for epileptics. Their inquiries have convinced the members of the commission that too much time has already been lost, and they strenuously recommend immediate legislation in behalf of epileptics.

Marcy, Henry O.: The Milk Supply of Cities. (*The Journal of the American Medical Association.* 1898. Vol. xxxi., No. 24.)

In the course of an extended article on this subject, the author presents some very interesting statistics regarding the milk supply of American cities. The live stock interests of our country are so enormous that it is difficult to form a just appreciation of their value. According to the census of 1890, there were that year in the United States between fifty-one and fifty-two millions of cattle; calves born, over sixteen and one-half millions, and the total number of milch cows were 16,511,950, of an estimated value of $4,000,000,000. The milk-supply for 1889 reached the enormous aggregate of 45,210,125,567 gallons, worth on the farm over $651,000,000.

The census of 1890 gives us the latest reliable data, but there has been a material increase in the value of the milk-supply in excess of the ratio of the increase of population. It is only by comparison that such enormous amounts can be appreciated. The total value of all the mineral and metal products, including coal, of 1896 are given as follows:

Belgium, ...	$100,000,000
France, ...	110,000,000
Germany, ...	300,000,000
United Kingdom, ...	340,000,000
United States, ...	737,958,761

Some years since Mr. Edward Atkinson of Boston showed that the *hen* was a greater producer of material wealth than the gold mines of the country. From the above figures we note that the *cow*, by her milk product alone, is a source of wealth not far below that of all the mineral products of the United States.

The butter product for 1889 was 1,024,223,468 pounds and the cheese product for the same year was 18,726,818 pounds. The average quantity of milk produced for milch cows during the year 1889 was $315\frac{54}{100}$ gallons, and to each individual in the United States for the year was $83\frac{1}{8}$ gallons, or nearly one quart per day for every man, woman and child in the entire country.

Estimating that six-tenths of the product was canned and shipped for distribution, the amount thus disposed of was 25,008,602,718; analytically 87 per cent. is water, and at least 75 per cent. of the water should be removed before shipment. The amount of *water* thus expensively distributed with only attendant loss, is so enormous that it can be appreciated only by means of comparison—18,756,452,037 pounds equal 9,378,226 tons =468,911 car loads each of 20 tons =11,725 train loads, each of 40 cars =2931 miles of continuous trains, reaching nearly from the Atlantic to the Pacific Oceans if thus placed to span the continent!

Were it possible to eliminate this enormous percentage of waste without damage to the resultant product, the gain would be almost beyond comprehension.

G. W. Goddard of Cambridge gives the following figures from New York City Board of Health Report: 1896, pp. 90, 91. Daily average of cows' milk and condensed milk shipped to New York City: Milk 828,612 quarts, cream 16,000 quarts, condensed milk 8600, a total of 853,212 quarts. To give milk equivalent to the cream add 64,000 quarts. To give milk equivalent to the condensed add 19,800 quarts, making a total of milk-supply 937,212 quarts, condensed 75 per cent. of the whole; 87.7 per cent. of above is produced in New York State; in New York City 2200, in State 1,112,370, in all 1,114,570 cows. Total cost at five cents per quart, over $60,000,000 per year.

Pitfield, Robert L.: An Epidemic of Diphtheria and Tonsillitis Traced to an Infected Milk Supply. (*University Medical Magazine.* 1898. Vol. xi., No. 11.)

The author, as bacteriologist of the State Board of Health of Pennsylvania, reports an epidemic of diphtheria and tonsillitis occurring in Germantown. The cases were seventeen in number. They were widely scattered, and but one common source of infection was discovered—the milk supply. Upon getting this clue, a hurried investigation revealed the fact that almost every case of diphtheria in town had used the Blue Bell milk, and during the whole epidemic there were but two cases that had not used it.

A peculiarity of all these cases was the fact that in every instance the streptococcus pyogenes was found associated with the bacillus of diphtheria.

Investigation at first failed to reveal the source of infection at the stable, although the hygienic conditions were not good. The stables were built at the lowest point, in a little dale, and the drainage overflowing from the privies round about, because of gravity, must soak through a stock of fodder outside the stable and the bedding inside. After percolating through the stables it could be seen oozing out into a vile-looking run from which intolerable odors arose.

It was found that three weeks previous to the inspection a malignant case of diphtheria had developed in a house close by. All the slops from the sick-room were cast into an overflowing privy, and the drainage overflowing the ground ran down a slight incline into the fodder and stables, impregnating the bedding of the cows and food with, perhaps, diphtheria bacilli. The udders of the cows as they lay on the litter may have become infected and the bacilli fallen into the milk during milking.

Besides the presence of the Klebs-Löeffler bacilli in the throat of the child, and the foul drainage in the stable, another possible factor in the contamination of the milk was a sick chicken in the dairy-yard. Clinically the fowl had true diphtheria, false membrane, most typical in appearance, was found in its throat and nostrils.

Bacteriologically the disease was evidently a diphtheria caused by another organism or organisms than the Klebs-Löeffler bacillus. Cultures showed numerous streptococci and staphylococci, and a peculiar bacillus resembling an organism often found in chickens suffering from fowl diphtheria, and which Veranus A. Moore, in a bulletin of the Agricultural Department, says is the bacillus of rabbit septicemia. Cultures from the membrane killed guinea-pigs in twelve hours, evidently from streptococcus infection. At a superficial glance this bacillus in its morphology resembled the diphtheria bacillus in that it was clubbed and curved.

Cheatham, Wm.: Protargol in Ocular Therapeutics. (*American Therapist.* 1899. Vol. vii., No. 7.)

In a recent discussion upon some of the modern drugs, the author stated that since resorting to the use of protargol in diseases of the eye, he had done away with the nitrate of silver almost entirely. He had used protargol in all forms of conjunctival inflammation, especially in conjunctivitis with purulent secretion.

In ophthalmia neonatorum he had found it much superior to silver nitrate, as it produced much less irritation, did not stain the eye, and penetrated far more deeply. Dr. J. M. Ray has also observed that protargol has a decided beneficial influence upon the pus flow in ophthalmia neonatorum, and considered it a very valuable remedy in ordinary cases of conjunctivitis. Dr. S. G. Dabney expressed the opinion that protargol had come to stay. He believed that it would be an advantage to increase the strength of the solutions from 3 to 5 per cent. in eye diseases, and stated that it could be employed as strong as 10 per cent., or even stronger.

Landau, Johann: Tannoform in Children's Diseases. (*Klin.-therap. Woch'schrift.* Vol. v., No. 40; *International Medical Magazine.* 1898. Vol. vii., No. 12.)

The author mentions the use of this drug in cases of skin disorders, such as eczemas, herpes zoster, applied externally in 5 per cent. and 10 per cent. ointments, and internally in diseases of the stomach and intestines, and intestines alone when of a catarrhal nature. When given by the mouth it lacks that disagreeable taste of most astringents, and can be taken without upsetting the stomach, and for these two reasons it is easily administered to children.

His conclusions are: (1) That tannoform is a good intestinal astringent, and besides its astringent action it is antiseptic. (2) Having no taste or odor it is easily given to children. It is not costly. (3) In acute stomach and intestinal disorders, in follicular enteritis, and also in chronic catarrh, it is a valuable remedy. (4) In eczemas of the face and head it gives speedy relief.

MEDICINE.

Lees, D. B.: Rheumatic Heart Disease in Children. (*British Medical Journal.* 1898. No. 1972.)

The fatal result the author believes, is not, as a rule, due to endocarditis. Evidence of recent or of former valvulitis is indeed almost invariably found in the hearts of children dead from rheumatic heart disease, but it is often quite slight in amount, and can have been only a minor factor. The mitral valve was implicated in all but one of the cases analyzed, but in seventy-six the damage to this valve was apparently very slight, and

consisted only in some thickening or small vegetations. Marked thickening and puckering of the valve segments was recorded in only three cases, and marked mitral stenosis in only nine. "Marked mitral regurgitation" was recorded in eleven cases, but it is not unlikely that in many of these it was really due to dilatation of the orifice rather than to deformity of the valve segments.

The aortic valve is implicated much less frequently than the mitral. In the 150 cases analyzed it was affected in only 51, or 34 per cent., and in only 9 of these was the affection more than slight.

Pericarditis is a much more striking phenomenon than endocarditis in the *post-mortem* appearances of rheumatic heart disease in children, and probably contributes much more largely to the fatal result. In only 9 of the 150 cases is it definitely stated that the pericardium was healthy. It was found to be more or less adherent in 113 cases (75 per cent.), and in 77 of these, or one-half of the entire number, the adhesion was complete over the whole surface of the heart. It is clear, therefore, that more than 50 per cent. of the fatal cases have suffered from severe pericarditis, and this is doubtless a very considerable factor in the arrest of the heart's action.

How pericarditis produces this pernicious effect is well worthy of consideration. It will probably surprise many to learn that it is rarely by the effusion of any great amount of fluid into the pericardial cavity. The figures with reference to this are very instructive. In only 38 cases of the 150, or 25 per cent., is it noted that any fluid at all was present in the pericardial cavity, and in many of these the amount was small. In not more than twelve was the amount estimated at more than two ounces, and in only six at more than three ounces. The highest estimates were five and six ounces, and each of these in one case only.

Osler, William: Prognosis of Heart Disease in Children. (*British Medical Journal.* 1898. No. 1972.)

The author in discussion expressed the belief that in the prognosis of any case of rheumatic heart disease in a child there were two important factors. First, did pericardial adhesions exist? He did not refer to the simple adhesions between the epicardium and pericardium, but to widespread adhesions between these layers and the external tissues of the pleura and mediastinum. The condition could usually be recognized by

valuable physical signs. The outlook in these cases was bad. The second factor of importance was the persistent recurrence of rheumatic manifestations. With each attack the heart was further damaged, partly by increased endocarditis, partly by myocarditis. He would refer to one additional point, namely: Dr. Rotch's sign—the increased dulness in the first right space. He could not agree with Dr. Lees that it had no value. He thought (and in the differential diagnosis between dilatation and slight effusion there was always an element of doubt) that he had frequently determined the existence of this sign, the importance of which had been corroborated by Epstein.

Baginsky, Adolf: Pericarditis in Children. (*British Medical Journal.* 1898. No. 1972.)

The author affirmed that he has been appalled by the number of children who had died of pericarditis accompanied by cardiac dilatation and hypertrophy. He had come almost to the same conclusion as Dr. Lees, that pericarditis was in a much greater degree than endocarditis a source of danger to children. They did not usually die in the first, but after two or three attacks of rheumatic fever, often at an age about the onset of puberty. In such cases the heart was found, *post-mortem*, so large that it was almost impossible to believe without knowing the facts that it was the heart of a child. As regarded the diagnosis, the first sign of mischief was often irregularity of pulse and cardiac impulse, something like what was called in Germany the *Galopp-Rhythmus*. There was sometimes no enlarged area of dulness on percussion. This had been the case in a case he had recently observed in which there was, however, enlarged liver, œdema of the face, and anasarca of the feet. *Post-mortem*, the heart was found to be dilated but not to a marked degree, and not hypertrophied. Pericarditis was present and the fatal result had supervened on the extensive adhesions which existed. In this case percussion had not suggested the presence of pericarditis at any time.

Finlayson, James: Heart Disease in Children. (*British Medical Journal.* 1898. No. 1972.)

In the acute phases of heart disease in children, the author in speaking on this subject expressed the belief that the cardiac muscle was often implicated from the affection of the pericardium or endocardium, or otherwise, so as to lead to dilatation. When

the case assumed a more chronic condition he thought that the mechanical valvular defects were often responsible for the perpetuation and aggravation of the heart disorder. The only criticism he would venture to make on Dr. Lees' paper was that perhaps he rested too completely on the results of cardiac percussion. He thought no part of the physical diagnosis was less certain than this percussion. Of course he naturally attached some importance to percussion as practiced by himself from time to time. He had no doubt that Dr. Lees and others found percussion as practiced by themselves equally useful to themselves, and the results quite comparable with each other from time to time. If these cardiac diagrams, however, executed by many distinguished physicians, were compared with one another, the results would, he believed, be more amusing than instructive. When he began to study diseases of children immediately after graduating, a current idea in the profession was that heart disease was rare in children, and this idea received countenance from well-known text-books. The first thing he learnt (after learning his own inability to grapple with the diagnosis of young patients without previous training) was that cardiac disease was very common, for under Sir W. Gairdner's teaching that part of diagnosis had been learnt. How common heart disease in children actually was must be well known to all who attended the out-patient department of a children's hospital. Another idea traditionally current then was, in children "with youth on their side," there was good hope of the growing heart outgrowing the defect. He confessed he could not give encouragement to this view. Of course in many cases cardiac murmurs disappeared, but when one arrived at a definite diagnosis of valvular defect the tendency of advancing years was to make the mischief worse instead of better.

Steven, John Lindsay: The Relationship of Rheumatism to Chorea. (*British Medical Journal.* 1898. No. 1972.)

Dr. Steven contributes the following to the discussion: "In the very few remarks which I shall contribute to this very interesting and important discussion I shall confine myself to two points: (1) The relationship of rheumatic heart disease in children to chorea, and (2) The prognosis of rheumatic heart disease in children. First let me state my impression, not based on an actual scrutiny of figures but on personal observa-

tion during ten years of several thousands of children, that as met with in out-patient practice in Glasgow heart disease in children apart from chorea and rheumatism is not a very frequent disorder. I do not think that this impression is due to my having overlooked the presence of cardiac lesions, as in our out-patient room it is the routine rule to have every child stripped for examination, and the condition of the thoracic viscera is ascertained in practically every case. I believe that all true chorea in childhood is of rheumatic origin, and my experience in the out-patient room of the Royal Hospital for Sick Children, Glasgow, has been such as to lead me fully to accept the teaching of Cheadle on this subject. Chorea is a rheumatic manifestation, and therefore, in my opinion, a cardiac lesion arising in connection with chorea, either before or after the time the choreic attack may have shown itself, is of necessity a rheumatic lesion. For another purpose I have exhaustively tabulated ninety-six successive and quite non-selected cases of chorea coming under my personal observation and treatment in the dispensaries of the Glasgow Royal Infirmary, and the Royal Hospital for Sick Children."

The state of the heart in ninety-six cases of chorea was as follows: not affected, 54; affected, 37; not noted, 5.

In all of these cases the state of the heart was ascertained with considerable precision, and in many of them the results of physical examination were recorded with great minuteness of detail. As a general rule, however, we do not see the end of choreic heart disease in childhood. In a number of the author's cases the heart disease did not supervene until after the second or third attack of chorea.

Ewart, William: The Signs of Heart Disease in Children. (*British Medical Journal.* 1898. No. 1972.)

Although the author believes in the frequent occurrence of a slight dilatation of the heart in rheumatic fever, he had been unable to obtain evidence of the dilatation. In a series of adults whom he had carefully studied throughout their rheumatic attacks, he had in a large proportion of the cases, met with extensive enlargements of the precordial dulness which in their outline, in the suddenness of their appearance and disappearance, in their evanescent character, in their tendency to relapse, and in the remarkable circumstance that they were not accom-

panied by any urgent symptoms or dyspnœa closely resembled the dulness described by Dr. Lees. He was able to identify these dulnesses with the presence of fluid. He based his diagnosis on three tests, two anterior tests and one posterior. He had described the latter as the "posterior lower dull patch." The occurrence of this dulness was in the adult a reliable sign of fluid in the pericardium. Anteriorly the position of the apex beat which remained unaltered, and could sometimes be felt even during the period of extension of the dulness at the left base, was strong evidence, which was confirmed by the angular outline of this extension. Still more striking was the test yielded by the angular shape of the dulness at the right base. Dr. Rotch had long ago given out that dulness at the right fifth inter-cartilaginous space was evidence of fluid in the pericardium. It was now well-known, however, that this dulness might be due to great dilatation of the right auricle. The real test was the shape of the outline of the dulness: pericardial fluid gave an acute angle outwards, the auricle invariably yielded a curved outline, ending at the xiphoid notch. A combination of these methods afforded full proof of the existence of effusion.

Whitney, H. B.: The Precordial Area in Children. (*Journal of the American Medical Association.* 1898. Vol. xxxi., No. 19.)

The author published a paper on this subject in this journal in 1893. Subsequent observations have not changed his views then expressed, which may be summed up as follows:

1. Up to the age of five years the precordial area is not perceptibly enlarged, but corresponds practically with that of the adult. This statement concerns mainly its right border, which in the adult is a perpendicular line corresponding very nearly with the *left* border of the sternum.

2. From the age of eight years up to and considerably beyond the age of puberty, the normal precordia differs markedly from that which is found in earlier life. Its right border now extends a half inch or even more beyond the *right* sternal margin; while the upper border is in the second interspace, and toward the *left* the precordia extends one-fourth to one-half of an inch beyond the mammillary line.

3. During the fifth, sixth and seventh years, conditions are inconstant. The enlarged precordia of childhood may be found

even in the fifth year, but is decidedly the exception. In the sixth year it is much more frequent, in the seventh it occurs in the majority of cases, while in the eighth year, as before stated, it becomes a constant and, in my experience, unvarying find.

As to method of percussion: It is presumed that the stroke is light, or at most moderate in force. His results have been always obtained with the fingers alone. He never uses a pleximeter. In percussion of the right heart, he has always laid special emphasis upon the note obtained over the upper and lower halves of the sternum as compared with each other. If the sternum is everywhere equally resonant, it is difficult to see how any enlargement of the heart toward the right can be affirmed, except in cases where there is some abnormal condition of the upper mediastinum. If, on the other hand, the lower half of the sternum is duller than the upper half, such dulness can be attributed only to the precordia; a view which may always be confirmed by more careful delineation of this dull area toward the right.

Comby: Pulmonary Tuberculosis in the Child. (*Archives de Méd. des Enfants.* Vol. i., No. 5.)

Among 211 children under two years of age, dying at the Hôpital des Enfants-Malades, 28 (13.27 per cent.) were tuberculoses. There were no cases of tuberculosis among 72 infants under three months of age; four between the ages of three and six months, and thirteen between six and twelve months old, while eleven were between one and two years. The steady increase (from 9 per cent. during the first year to 38 per cent. during the second) in tuberculous cases with the age of the child argues against hereditary and for later acquired infection. The chief point of entrance of the tuberculous poison is by the respiratory and not by the digestive tract. The tracheo-bronchial glands were involved in all the 28 cases; the lungs contained lesions in 21 cases, 7 showing cavity formation. Intestinal ulcers occurred in 8 cases; gastric ulcer in 3; peritoneal tubercles in 4; hepatic and splenic tuberculosis in 13; discrete renal tubercles in 4 and meningeal in 3 cases.

Three clinical varieties were noted among 24 carefully observed cases: 1. *Apyretic tuberculosis*, which ran the course of an ordinary athrepsia or dyspepsia, the symptoms being emaciation, diarrhœa, and vomiting; 2. *Febrile tuberculosis*, simulating

pneumonia, meningitis, or typhoid fever; the temperature runs very high, even to hyperpyrexia, and there is much prostration; 3. *Classical ulcerated phthisis*, analogous to adult cases, with cough, night sweats, hectic fever, etc.

It is a remarkable fact that in nurslings tuberculosis runs a very much more rapid course than in older children and adults, and has greater tendency to become generalized. Certain diseases exert an aggravating influence upon the tuberculous process: measles, pertussis, diphtheria, la grippe, pneumonia, etc.

In later childhood pulmonary tuberculosis is more nearly similar to the phthisis of adults. Among 45 cases occurring in children between three and fifteen years of age, five clinical forms could be distinguished: 1. *Apyretic tuberculosis*, showing that latent and torpid cases are not very rare; 2. *Febrile tuberculosis*, with varying temperature changes, progressive course of the disease and death in a condition of marasmus; 3. *Tuberculosis of a pneumonic or broncho-pneumonic form*, simulating these diseases very closely; 4. *Pleural and pleuro-peritoneal tuberculosis*, often curable; 5. *Tuberculosis simulating typhoid fever*, with long continued gastric symptoms. At autopsy these cases often show a generalized as well as a pulmonary tuberculous process.

The prognosis is less grave in later childhood than in infancy, where pulmonary tuberculosis runs a rapid, and almost always a fatal course. In older children recovery is not rare.

Bonnet: Hereditary Tuberculosis in a Nursling. (*Rev. Internat. de Méd. et de Chirurgie.* Vol. ix., No. 11.)

A premature infant (seven months) was nursed for three days by his mother, who died of pulmonary tuberculosis two months after the child's birth. Sterilized milk was given to the baby, who coughed from his birth and died at three months of age, having had fever, diarrhœa and increased cough for some days with emaciation.

At the autopsy both lungs were found studded with caseous tubercles; there were three or four tuberculous ulcers in the lower ileum, the mesenteric-lymph nodes were very large and cheesy, and there were tubercles in the kidneys, spleen and liver, which was fatty.

The author believes this to have been a case of hereditary tuberculosis from the age of the lesions, and from the fact that

the child was in his mother's presence so short a time, having been removed at the end of ten days to a place where infection could be excluded.

Crandall, Floyd M.: Malarial Fever in Infants and Children. (*International Clinics.* 1898. Vol. ii. Eighth Series.)

The author limits his paper to the consideration of the peculiarities of malaria in young children. Malarial fevers are due to the development in the red corpuscles of the blood of the *plasmodium malariæ* of Laveran. This parasite does not differ materially in its behavior and life history in infants and adults. The pathology is, also, practically the same at all ages. The most important pathological condition engendered by malaria is anæmia, due to wide-spread destruction of the red blood cells and enlargement of the spleen.

One of the first peculiarities to be noticed in malaria in children is the behavior of the paroxysm. A chill is extremely rare under five years. Instead of a true chill, the child becomes blue and the features are pinched; the hands and feet are cold; the skin becomes shrivelled and molted or studded with small elevated points. This may continue from five minutes to half an hour. Even this appearance may be absent, but close observation will usually reveal at least a vestige of a cold stage. Vomiting is so common during this stage as to be almost the rule. Sharp epigastric pain is also common.

The third stage is, also, less well defined than in the adult. Sweating is rarely profuse, and is often lacking entirely. When present, it sometimes shows a peculiar tendency to delay. In the adult the sweating stage follows the fever very promptly; in the infant there is frequently a considerable interval between the two stages. In older children this stage is sometimes as well marked as in adults.

The stage of fever is, therefore, the only constant stage of the malarial paroxysm in the infant. Even this stage frequently shows peculiarities. The temperature is prone to range very high; a temperature of 104° or 105° F. or higher is not uncommon. In the author's experience, children bear these high temperatures comparatively well. The symptoms present during this stage are those common to all febrile conditions—flushed face, suffused eyes, rapid pulse and respiration, and great thirst.

Nervous symptoms are comparatively prominent in the

malarial fevers in young children. The paroxysm is sometimes ushered in by a convulsion. This, however, is comparatively rare. Twitchings, restlessness, severe headache, and neuralgic pains are common. Pain in the head, stupor, vomiting and fever may lead to the diagnosis of tubercular meningitis.

Symptoms referable to sleep are extremely common. In some cases the child is very restless and wakeful during the paroxysm, but more frequently there is a peculiar heavy sleep, often amounting to stupor. The natural sleep at night, however, is usually broken and the child is restless and wakeful. In children over four years of age terrifying dreams at night are not uncommon.

Enlargement of the spleen is a very important symptom of malarial infection during early life, for that organ increases and diminishes in size more readily than in adults. After the disease has continued a few days, enlargement can usually be detected if an examination is made during the paroxysm. At the end of a week it can usually be detected during the interval. In infants, percussion is of but little assistance in determining splenic enlargement. If the spleen is sufficiently enlarged to be of diagnostic importance, it can be felt at the free border of the ribs. A little experience in examining for the spleen will render detection not particularly difficult.

Anæmia is a constant accompaniment of malarial fevers of all varieties, and is due to destruction of red blood cells by the plasmodium. Liberation of pigment at the time of segmentation produces discoloration in addition to the anæmia. Infants seem prone to acquire a sallow, yellowish hue rather than the bronzed appearance so characteristic in the adult. In severe and long-standing cases they acquire a decidedly cachectic appearance.

Bronchitis is of frequent occurrence among infants and children suffering from malaria; the appetite is fitful and is usually impaired; the child is irritable and requires unusual attention. Diarrhœa is extremely common, but constipation is more frequently seen. Hematuria occasionally occurs in severe cases.

The most marked peculiarities of malarial fever under five years are as follows: 1, Mildness or absence of the first and third stages; 2, irregularity of the hour of paroxysms: 3, constant enlargement of the spleen; 4, tendency to nervous disturbances.

Acute malarial fevers usually assume the intermittent type. In very young infants and in children in whom the disease is

unchecked it sometimes becomes remittent. The paroxysms usually become less clearly defined as time passes. Under four years tertian intermittent is rare, but becomes more common with increasing age. The quartan type is unknown in young children. The invariable type in infants is the quotidian—that is, the paroxysms occurring daily. It is, in fact, however, a double tertian, for study of the plasmodium has demonstrated that the disease is due in most cases to two sets of germs, one set maturing and segmenting each day. Very irregular types of intermittent and remittent fever are often seen in infants and are very difficult of diagnosis.

Infants and children as well as adults are subject to chronic malarial infection. In this condition there is but little fever; anæmia and emaciation are marked and progressive; the skin is dry and becomes of a parchment-like color. The digestion is often deranged and the child is never well. The spleen is always enlarged, and often attains an enormous size; in older children it may be tender and painful. Dropsy sometimes occurs, and petechial eruptions are not uncommon.

The diseases which are most commonly mistaken for malaria are chronic intestinal indigestion, tuberculosis, septic infection, and, in older children, typhoid fever. Demonstration of the plasmodium renders the diagnosis at once certain. This, however, is the work of an expert, and is yet unavailable for most practitioners. It is only in rare cases that the careful study of the symptoms will fail to reveal the true nature of the disease. The treatment test is a very important one, for the fact is amply demonstrated that quinine relieves acute malarial fevers, while it has but a transient effect upon non-malarial fevers.

While the author believes that malaria is more common in young children than was formerly taught, he urges strongly against the other extreme of loosely attributing all febrile conditions in children to malaria. In most localities there are ten cases of irregular fever due to gastro-intestinal derangements to one case due to malaria.

As regards treatment he advises free catharsis at the outset by means of calomel administered in small doses frequently repeated. Quinine, he believes, is the only drug upon which reliance can be placed. It is well tolerated by children as regards its physiological effects, but in many cases is not tolerated by the stomach. Young children are prone to vomit it, even when

it is swallowed without objection. It must be administered to them in solution. The taste is well covered by syrup of yerba santa. When not vomited this is one of the best vehicles for use. It may sometimes be administered successfully in equal parts of simple syrup and simple elixir. A solution in water will sometimes be found to be the best for young infants. Very young children may sometimes be taught to swallow a pill. The question of administration is then very simple. If the dose required is small, tablets of quinine and chocolate may be employed. When properly made they are very palatable, but their strength is so small that they are not to be relied upon when prompt action of full doses is required.

If for any reason it is impossible to administer the quinine by the mouth, it may be given by suppository or rectal injection. Irritability of the rectum in infants is the chief objection to this method of administration. In cases of necessity four grains of quinine dissolved in one ounce of water may be given by high injection through a tube. The oleate of quinine, either by inunction or by rectal injection, has been unsatisfactory in his experience. In rare cases it is necessary to administer it hypodermically.

Children require comparatively large doses of quinine, but it is difficult to give definite dosage. In deciding upon the amount to be given the daily quantity should be determined rather than the single dose. A child of one year may safely take five to eight grains daily. It may be necessary to considerably increase this amount. At three years the initial daily dose may be nine grains, to be increased as indicated by the symptoms. After ten years adult doses may be required.

Quinine is most effective if administered about three hours before the paroxysm. In the case of children it is usually best to divide the dose. The author commonly gives half the desired dose at seven o'clock in the morning and the remainder three hours before the paroxysm is expected, if it occurs at an hour to permit such an arrangement. In infants the paroxysm is so irregular and indefinite in its occurrence that this rule cannot be followed. It is then necessary to give a dose three times a day. The first dose may be given at six or seven in the morning and repeated in three hours. This usually forestalls the paroxysm. A dose is again given in the evening.

In the chronic forms of malaria, quinine alone is not sufficient

to effect a cure. A small amount should be given daily, but the chief reliance should be placed upon arsenic, which should be given in moderate doses for a considerable period. Reduction of the enlarged spleen is sometimes hastened by the use of iodides. The syrup of the iodide of iron is particularly indicated. Acetanilide is of decided service in relieving neuralgic pains. The anæmia in both acute and chronic cases usually requires active treatment, and it is advisable to begin the administration of iron as soon as the paroxysms have been broken.

SURGERY.

Sherman, Harry M.: Traumatic Dislocation of the Hip in Children. (*Philadelphia Medical Journal.* 1898. Vol. ii. No. 35.)

Owing to the rarity of dislocation of the hip in children, the author quotes from standard text-books. He reports three cases occurring in his own experience and three occurring in the hospital service of Dr. Emma S. Merritt.

Dr. Owen does not mention it. Ashby and Wright, say, in very few words, that the accident is rare, but that the dislocation is easily reduced. Dr. Powers says also that it is rare, and that he has seen but one case which was reducible. Packard has collated and refers to 44 individual cases, reported by different surgeons from 1772 to 1890. Counting the congenital cases with the traumatic, Packard says that dislocations of the hip are the second most common dislocation in children. That it is not so uncommon, absolutely, as one might infer from the light dismissal of the subject by the English writers quoted, is shown by Stimson, who quotes Krönlein, 8 cases, 4 under ten years of age, and Prahl, 41 cases, 12 under ten years of age. Hamilton, 84 cases, Malgaigne, 41 cases, and Agnew, 89 cases, do not, however, give anything like so high a proportion as occurring in children; in fact in Agnew's list there is no case that occurred in a child. It is not to be expected, however, that all collections of cases will give, on analysis, the same results, and that the dislocation does occur in children is known.

In Dr. Merritt's case there was no record of any early efforts at reduction having been made. In my own case, at the end of six months, there had been no attempt at the formation of a new socket, but these six months should be

counted as, practically, only between three and four, for during the first two, and perhaps more, the child was certainly in bed under treatment, and not using the limb. In Dr. Merritt's case, after the lapse of a year, during all of which time the joint had been used, there was a well-marked new socket. In my case the adhesions around the head were insignificant and in Dr. Merritt's case they were many and strong, and this may be explained, not only by the difference in the ages of the dislocations, but also by the difference in the ages and sex of the patients, one being a little girl of four years, and not extraordinarily active, and the other an energetic boy of nine years, whom not even a dislocated hip could lay up.

The point is made that traumatic dislocation must be differentiated from the pathologic dislocation that sometimes occurs in cases of tuberculosis of the hip-joint.

Pierson, C. Yelverton: The Treatment of Spina Bifida by "Open Operation," Followed by Closure of the Spinal Canal. (*British Medical Journal.* 1898. No. 1975.)

Practically the only methods of treatment usually adopted by the profession resolve themselves into affording protection to the tumor on the one hand, or resorting to injections of Morton's iodo-glycerine on the other. A considerable amount of success has attended the use of this latter remedy, and several so-called cures have been reported.

The Committee of the Clinical Society, after a most careful inquiry, reported in favor of injection of the sac. The committee collected 71 cases treated by this method, of which 35 recovered, 27 died, 5 were unrelieved, and 4 were improved. Morton himself reported more favorable results, but personally the author is not prepared to admit, on the one hand, that the mere shrinkage of the tumor, following upon such injections, can be regarded as a cure in the true sense of the word, while on the other he is satisfied that if he had a full report of all the cases so treated the number of failures or fatalities would probably be in a majority. Several of such have come within his knowledge, though they have not been under his personal charge. He thinks the time has arrived when we may fairly advocate bolder and more complete methods, and the singular success which has attended operation by the open method, with closure of the spinal canal.

The author reports the case of a child aged six years upon whom he operated in the following manner: The patient was placed on his left side, with the head low, and anæsthetized with chloroform. The skin, which had been previously disinfected, was again carefully washed and the hair removed by shaving. A longitudinal incision was made along the lateral aspect of the tumor on the right side—or what in the patient's position was the upper surface—at such a distance from the margin as to leave sufficient integument to meet a corresponding flap on the opposite side. This incision extended down to the lining of the sac, but not through it. All bleeding points were secured to prevent blood entering the cavity; the sac was then laid open, and the margins held up by means of compression forceps so as to retain as much fluid as possible. The whole contents of the sac were then completely displayed, the connections of cord and the numerous nerves passing from it being clearly visible *in situ* as they lay in a bath of perfectly clear cerebro-spinal fluid.

The separation of the cord and its membranes from the skin was then commenced, and carefully carried out in as bloodless a manner as possible from above downwards, and restored to the spinal canal—a soft piece of aseptic sponge being temporarily placed in the upper opening of the canal to prevent the entrance of blood or the leakage of cerebro-spinal fluid; needless to say, during the dissection the fluid in the sac became blood-stained, and some of it escaped. This difficulty was easily overcome by keeping up frequent irrigation with warm saline solution. An incision similar to the first, and meeting it at the upper and lower extremities, was now made, and the intervening elliptical portion of integuments and sac removed; two lateral flaps of the dura mater were now separated from the surrounding tissues and were brought closely in apposition by the application of a continuous suture of fine silk, the piece of sponge previously referred to being removed at the last moment before drawing the suture tight and fastening it. The periosteum was now raised from the inner aspect of the neural arches by raspatory, with the object of providing periosteal flaps, but these were of little avail, as the arches were so very defective; the rounded margins of the large elliptical aponeurotic opening were pared so as to provide freshly-cut surfaces. The skin and subcutaneous tissues having been undermined and retracted, two large, deep lateral incisions were then made through the aponeuroses of the multi-

fidus and erector spinæ muscles parallel to the spine and at a distance of about an inch from their free margins. The aponeuroses were then brought closely in contact by means of buried sutures of strong silk, thus providing a complete covering to the spinal canal; at the lower angle a small drainage tube was inserted. The skin flaps were now united by interrupted sutures and dressings applied.

So far as the operation itself is concerned, the author lays stress on the following points:

1. The position of the patient should be such as indicated—lying on the side, with the head low.

2. The first incision should in all cases be a lateral one, so as to avoid the possibility of wounding the cord or nerves. Moreover, this lateral incision, made on what is the uppermost aspect of the tumor in the posture recommended, gives a complete view of the interior of the sac. Dr. Mayo Robson uses a median incision in cases of simple meningocele, but the author is not disposed to adopt it, as many authorities state that it is often impossible to say whether the cord is present or absent; and in any case, as the central portion of the skin and sac will have to be removed, he cannot see the object of a median incision.

3. It is a distinct advantage to retain the fluid in the sac, or replace it by irrigation during the separation of the cord, etc., from the skin. Mr. Robson advocates that in cases where this separation is difficult, a portion of the skin should be left attached to the cord and placed with it in the spinal canal. This seems an objectional proceeding, if it can possibly be avoided, as covering up such epidermic structures is likely to give rise to after-trouble, such as the growth of hair or the formation of sebaceous tumors.

4. The insertion of the sponge to prevent leakage from the canal during operation.

5. The liberating lateral incisions enable the aponeurotic coverings to be glided into a position of complete approximation over the canal, and to be retained there by sutures without the tension which would otherwise exist.

6. The operation described is applicable to cases of meningomyelocele—by far the most common form met with in practice, and which has usually been regarded as a form on which it was unjustifiable to operate.

7. The use of a small drainage tube for a few days between the dura mater and aponeurotic covering is advisable in case leakage of cerebro-spinal fluid occurred.

All authorities lay down that the existence of paralysis below the tumor is a contraindication to any form of operation. With this the author cannot altogether agree, though he admits it is a very unfavorable condition. He thinks the existence of paralysis would be an indication for earlier interference if operation were entertained at all, or for a preliminary treatment by tapping or acupuncture.

The author does not advocate the general adoption of an operation such as described, but is satisfied that when it can be successfully carried out the results will be far beyond those obtainable by the usual methods.

Phelps, A. M.: Lateral Curvature of the Spine and Pott's Disease. (*Virginia Medical Semi-Monthly*. 1899. Vol. iii. No. 22.)

The author in this paper attempts to present but a few points upon a very broad subject. So many conditions are described as Pott's disease that it is first fitting to say that the true one is tubercular unquestionably; those not tubercular are not Pott's. The disease was described by Pott as tubercular disease of the ends of the bone or cartilages. Following typhoid fever, there may be acute pain from absorption of the results of inflammatory changes in Peyer's patches, but it is septic. Then mycosis may afford opportunities for mistakes, or a child may suffer an injury, an abscess may result with development of septic symptoms, but this trouble is osteo-myelitis, not Pott's disease.

True Pott's disease is a true infection of the bacillus tuberculosis into a focus of previous inflammatory action; that it inoculates tissues not embryonic, is impossible. As the area of inflammation extends inoculation takes place, with a destruction of bone. This was formerly termed caries, but this term had better be dropped. The disease may attack the intervertebral cartilages. Why is it that of two children receiving an injury one will develop Pott's disease and the other not? Because the former is strumous. Struma is a condition of the protoplasm making up the ultimate cell; it is a state in which one cell succumbs to germ life and the other resists it. It is born with the

child, and is seen typically in the slums of any large city, being imported to this country by the people who lived in the walled cities of Europe. It will take Amercia a thousand years to grow children free from this condition.

Lateral curvature differs from Pott's disease in that it is never produced by inflammation or disease of the spinal column except rickets. Positions in utero produce it, as in short leg.

Before deformity begins is the correct time to make the diagnosis. In the beginning there is difficult breathing (often treated for asthma or worms). If the child is lifted it will cry. It has "bellyache," and it holds its hand flexed to its side. There never was disease of a joint in which motion was not limited from muscular spasm. If the spine is flexible, it is not Pott's disease; if it is rigid, you may be absolutely certain it is. If a baby has Pott's disease, and you raise it by its head, it will come up stiff; if not, it will roll up like a ball.

There is always pain (usually anterior) in Pott's disease, but not in lateral curvature. If high up, it is in the chest; lower, in the stomach; still lower, in the abdomen. After the case has gone on, there occurs muscular atrophy and then deformity, but no swelling. On one side the bodies of the vertebræ are absorbed, but on the opposite side they are normal.

There is not a single straight spine in the world; if so, a man would break his head every time he jumped six feet. Every lateral curvature to be cured must have a compensating curve, so as to allow the vertical through the centre of gravity to fall between the feet. In some patients, *e.g.*, those with rickets, the curvature is due to pressure. Ossification is sometimes due to central nerve lesion. Other curvatures may be caused by injury.

Treatment must be based on rational principles. The author would treat lateral curvature with gymnastics and a support to remove pressure. Pott's disease is to have the same treatment as a broken leg—*i.e.*, fixation, to give nature a chance to repair.

In lateral curvature some say that every brace produces atrophy; others, that bracing is all that is required to remove pressure and prevent absorption. Bracing, properly done, does not produce atrophy. A very good plan before beginning treatment is to determine the extent of bone changes. Have the patient bend forward; then the application of a straight line along the back will show the extent of deviation. Find the size

of the vertebræ and then brace. The diameter of the column is usually two inches. If deviation is one-half of this, a mechanical appliance is absolutely necessary to obtain stable equilibrium, producing thus one curve to balance the other.

A child under three years cannot be braced, for the pelvis is too small as compared with the thorax, and the retaining strap will slip. Put on a Sayre's cuirass or a plaster of Paris portable bed. The latter is also of benefit in Pott's and hip disease.

Regarding spinal bracing, where the band around the pelvis is narrow and small there is tilting. Suspension and then fixation is necessary. The Hessing corset was invented in 1764 and forcible replacement in 1768, and then abandoned, and we will have to do likewise. Sayre was the first man in this country to make a suitable apparatus for Pott's disease and lateral curvature —the plaster of Paris corset. Notwithstanding that it is heavy, cumbersome and wears out, it is the best of all braces. He marked a new era in the treatment of these diseases when he suspended the patient and thus removed the pressure. Afterward it was sought to use other materials, and then came leather and rawhide, which proved valueless.

The author went to Odessa to learn to make the wood corset, and was pleased with it, but as soon as perspiration occurred, its shape changed and the patient became shorter. Then he invented the aluminum corset. Its life is from fifteen to twenty years. It was first made in lateral halves, but, proving cumbersome, the duplex hinge was added, and now it can be put on and laced as the ordinary corset. In lateral curvature, with proper gymnastics, it will cure.

The new operation of forcible replacement was used by Hippocrates 500 B. C., forgotten, revived in the time of Amboise Paré (fifteenth century), again forgotten, and finally revived recently. Old cases with anchylosis, great deformity, or abscess should not be touched. In beginning cases, pushing and then treatment as described before may avail, but the vertebræ must be wired. Even then in two or three years they will be found bent.

American Pediatric Society.

ELEVENTH ANNUAL MEETING.

Deer Park—June, 1899.

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It is the request of the President that members present the titles of additional papers at once, so that subjects may be grouped and further papers called out; also that they induce those interested in the subject of the intended paper to present a discussion, either written or oral.

The titles of papers should be sent to the Secretary, Dr. Samuel S. Adams, 1 Dupont Circle, Washington, D. C., or to the Chairman of the Council, Dr. T. M. Rotch, 197 Commonwealth Avenue, Boston, Mass.

Preliminary Programme

A Case of Multiple Osteomyelitis in an Infant. By T. M. Rotch, M.D., Boston.

Congenital Heart Disease, with Especial Reference to the Condition of the Blood. By Charles W. Townsend, M.D., Boston.

Acute Articular Rheumatism in Infants Under One Year, with Report of a Case. By D. J. Milton Miller, M.D., Philadelphia.

Urticaria of the Mucous Membranes. By Frederick A. Packard, M.D., Philadelphia.

The Renal Complications of the Acute Enteric Diseases of Infancy. By J. Lovett Morse, M.D., Boston.

Scurvy in an Infant of Seven Weeks. By Floyd M. Crandall, M.D., New York.

Enlarged Bronchial Nodes. By J. Park West, M.D., Bellaire, O.

Observations on Certain Abnormal Conditions in the Livers of Infants and Children. By Rowland G. Freeman, M.D., New York.

Report of Two Cases of Trismus and Tetanus Treated Successfully with Curare Injections. By B. Scharlau, M.D., New York.

A Case of Meningitis Due to the Typhoid Bacillus. By A. H. Wentworth, M.D., Boston.

A Result in Infant Feeding. By Charles G. Jennings, M.D., Detroit.

Vaccinoid. By F. Forchheimer, M.D., Cincinnati.

Increase of Weight of Infants Fed Wholly or Partially with Sterilized Milk. By Henry Koplik, M.D., New York.

Gastrodiaphany in the Infant, with Exhibition of Instrument. By Henry Koplik, M.D., New York.

Porencephalus. (Case and Specimen.) By George N. Acker, M.D., Washington.

Sarcoma of the Cerebellum in a Child Aged Four Years. (Case and Specimen.) By Samuel S. Adams, M.D., Washington.

A New Stethoscope for Use in Infants and Children. By Henry Koplik, M.D., New York.

ARCHIVES OF PEDIATRICS.

VOL. XVI.] MAY, 1899. [No. 5.

Original Communications.

BRIEF REPORTS OF INTERESTING CASES.*

BY J. P. CROZER GRIFFITH, M.D.,

Clinical Professor of Diseases of Children, in the University of Pennsylvania, Philadelphia.

MENINGITIC TYPHOID FEVER.

Meningitis in typhoid fever is of rare occurrence. Meningitic symptoms, however, are quite frequent, and, I think, especially often seen in children. Cases slightly resembling meningitis do not so easily lead us astray. Those which greatly resemble it constantly do, in spite of the warning which precept and experience give us to be on our guard. I wish to report the following instance, not as a rarity, but as a typical example, particularly as the simulation both in symptoms and in early history was so marked that I confess I erred entirely in my diagnosis at first.

John S., ten years old, had always enjoyed excellent health until December 31st. Without any prodromal symptoms whatever he suffered on this date from severe headache and an attack of epistaxis. Upon the next day his headache continued severe, he vomited, became very delirious, and had another nose-bleed. From this time until seen on January 3d he had frequent vomiting, was constantly and violently delirious, and complained of pain in the head and abdomen. There was no cough; the bowels had been slightly loose; the temperature taken on January 3d was 105°. On January 4th, and fifth day of the attack, he had three loose stools, his delirium was unabated and his temperature continued about 105° and sometimes more and was little affected by sponging or tubbing. The examination of the chest and abdomen gave negative results. The pulse ranged from 140 to 150 and the circulation seemed poor. The notes of a more careful examination on January 5th read as follows: "The boy is entirely unconscious, but can be roused to answer questions to a slight extent. He lies generally on his side with his legs drawn up. There is some cyanosis of the lips

* Read before the Philadelphia Pediatric Society, March 14, 1899.

and hands; the neck is not stiff; the *tache meningitique* is well marked on the abdomen; there is a short, loose cough. The examination of the lungs shows nothing abnormal." There was no stool on this day. Vomiting had ceased. On January 6th the Board of Health reported the presence of the Widal reaction in the blood taken two days before. The temperature was somewhat lower; there was frequent shivering; great delirium continued. By January 7th the mental condition had altered greatly for the better. From this time on the case ran the ordinary course of typhoid fever. Apyrexia was established on the nineteenth day.

The early nose-bleed in this case of course suggested typhoid fever. The occurrence early of loose movements did so also, but was not convincing, as I have seen decided diarrhœa present in meningitis. On the other hand, the very sudden onset and the rapid development of wild delirium made me feel convinced that I was dealing with meningitis; and even when the positive Widal reaction on January 6th pointed to typhoid fever there was still reason to think that there was present at least a complicating meningitis. The sudden alteration of symptoms on January 7th cleared up completely a diagnosis which, I know, does not seem as difficult in telling it as I can assure you it was at the bed side.

ACUTE YELLOW ATROPHY OF THE LIVER.

The following case, although lacking the confirmation of an autopsy, may with good reason be denominated acute yellow atrophy of the liver.

Jacob H., aged seven years, white. The family history was negative. The child was always healthy and strong until about three weeks before seen by me. At the time of the onset of symptoms he complained of not feeling well and he slept poorly, but there were no very definite complaints and he continued to attend school. About two weeks before he entered the Children's Hospital slight jaundice began and gradually became intense. The physician who had attended him stated that the liver had been enlarged, but had later grown smaller. There had been no actual pain, but the hepatic region had been slightly tender on palpation. The bowels had been constipated, and the stools, produced by the use of laxatives, had been light colored. There was said to have been no vomiting, cough or fever, and his mind had been clear until the day before admission to the hospital, when he passed into coma, only occasionally rousing and seeming to be rational. On the day of admission,

January 25, 1899, he was still comatose. There was occasional bleeding from the mouth.

Examination on January 26th showed a slightly built and rather thin child, intensely jaundiced and in persistent deep coma. The breathing was stertorous, the breath extremely foul, sordes was on the teeth and there was blood in the mouth, the point of origin of this not being clearly discoverable. At frequent intervals the child vomited black material, evidently decomposed blood. The examination of the heart and lungs showed nothing abnormal. The edge of the liver could not be felt, and percussion showed that its lower margin reached not lower than about two and a half inches above the costal margin. The upper margin was in the normal position. The diminution in size was very striking. The bladder was full of urine which was removed by catherization.

The child died suddenly a few hours later before further examination could be instituted. Just before death he vomited an unusually large amount of black material, and passed a small, formed, gray stool. His temperature while in the hospital had been subnormal until just before death when it rose to nearly 101°. No autopsy could be obtained. Examination of the urine made by Dr. W. S. Newcomet showed leucin and tyrosin in abundance, bile and a trace of albumin, but no tube casts.

The diagnosis in this case seems undoubted. We have the characteristic combination of intense jaundice, coma, great diminution of the size of the liver and the presence of leucin and tyrosin in the urine.

The disease is rare at any age and still more so in children. Yet cases occurring at an early age are now and then reported. I have by me the records of five of which I have read the accounts in medical literature during the last two or three years; *viz.:* those of Merkel, v. Kahlden, Starck, Talamon, Lanz and Fison.

TWO CASES OF THIGH FRICTION IN INFANTS.

The occurrence of masturbation in infancy, although a matter of such importance, is probably so frequently overlooked by physicians and parents that I am induced to bring the matter to the attention of this Society by the report of the following two cases:

Bessie P., sixteen months old, seen in the Out-patient Department of the Children's Hospital. The child had always been well; she had twelve teeth and was beginning to walk; her appetite and digestion were good; the bowels tended to be

constipated. The mother said that three or four months ago the child began to squirm at times "as though she had seat worms." At these times she would grasp hold of her mother tightly, if in her lap; would go through with certain wriggling movements with her legs, especially the left one; would grow red in the face, and would then break out in perspiration. She did not appear to be in pain, but to be laboring under intense excitement. Several such attacks would occur in the course of the day. Occasionally urination was painful.

The possible nature of the condition having been suggested by us to the mother she admitted that the movements were so peculiar that the suspicion had arisen in her own mind. Examination showed the vaginal orifice to be quite red. Touching the inflamed area with a probe caused writhing movements and crying. The child was lost sight of after this one visit.

The following case, a private one, has been under observation for some time, and the symptoms have been observed with care:

Anna X., now thirteen months old, had always been remarkably well, and was still so when thigh friction was commenced at the age of eight months. At first the habit was practiced in moderation, but it grew greatly worse at the age of nine months during an attack of indigestion. At this time the act was so frequent that it was impossible to leave the child unoccupied on the bed lest thigh friction be begun. The nature of the act was as follows: The child, at first in a sitting posture, would throw herself back upon the bed, stiffen the legs from the hips down, usually place one foot upon the instep of the other, and make decided, although slight friction of one thigh against the other. All this was done silently, the silence sometimes attracting the attention of the nurse or parents. If the motion was allowed to go on, profuse perspiration would break out about the head. At times, when there was reason to suppose that masturbation had been carried on for some while unprevented, the child would have a very exhausted appearance and be wet with perspiration, especially of the head. Occasionally the act appeared to have been performed during sleep. The urine was apparently generally increased in amount, and urination was quite frequent. Repeated examination of the urine showed nothing abnormal. Examination of the genitals often revealed some redness in the region of the clitoris and below it. This was always worse when the thigh friction was excessive. There was no vaginal discharge.

Treatment consisted in the maintainance of the strictest cleanliness, the use of mildly astringent washes and ointments, and especially in constant watchfulness. Various attempts were made so to tie the knees or the ankles that friction could not be performed, but none of these were of any use.

The attack of indigestion was quite obstinate, and the health of the baby was considerably affected. As this trouble disappeared and the strength improved, and particularly when, as a result of the improving health, the child learned to crawl, and sat less upon the bed, the habit grew much less, and it has now nearly disappeared, although still with occasional relapses.

Text-books say very little at all and still less in detail, about this form of masturbation in children. Townsend reported five interesting cases a few years ago, before the American Pediatric Society, and in the discussion which followed a few other cases were mentioned. Yet the habit is certainly more common than ordinarily supposed.

It is important in treatment to remove all sources of irritation. In the case of Anna X., however, it was very difficult to determine whether the redness and irritation of the genitals was the result or the cause of the masturbation. No other source of irritation could be discovered; and, as stated, the habit commenced when the child was in blooming health. Most important in the line of treatment is the early mastering of the habit by constant watchfulness. In obstinate cases mechanical means should be sought which will prevent the approximation of the thighs. The keeping of the ankles apart by any apparatus will not necessarily stop the friction, since it is very easy for the baby, with the knees flexed, and the ankles apart, to bring the thighs together and then to rub the clitoris between them. Some apparatus should be applied above the knees, of such a nature that free motion is allowed, yet no approximation permitted. It will be noticed that both the cases reported were in girls, as were all of Townsend's. In fact it is difficult to see how thigh friction could be practiced by a male infant; although I am not prepared to say that it cannot be done.

123 SOUTH EIGHTEENTH STREET.

Forced Artificial Respiration with the Use of O'Dwyer's Intubation Tube.—Lowy, of Budapesth (*Deutsche medicinische Wochenschrift*, 1898; *Wiener klinische Rundschau*,) reports six cases in which he has successfully employed the O'Dwyer method of artificial respiration. The larynx is intubated, and air is forced through the tube by means of a bag connected with it.—*New York Medical Journal.*

RECENT ADVANCES IN SURGERY OF THE SKULL.*

BY SENECA D. POWELL, M.D.,
Professor of Surgery, Post-Graduate Medical School; Visiting Surgeon, St. Mark's Hospital, New York.

It is not my intention in this short paper to attempt to cover any part of the work of other surgeons, nor to speak of the conditions for which my operations have been performed. I wish only to demonstrate that the skull can be opened and the brain inspected and operated upon without any very great danger to the patient, and in doing this I must of necessity confine myself to a description of my own method of operating upon the skull. The conclusions which I have reached in this paper have resulted from the study of one hundred and four craniectomies in children, and fifty-seven operations upon adults. In March, 1891, I made a craniectomy upon a child four and a half years of age at the New York Infants' Asylum, of which institution I was then Attending Surgeon. I followed out Lannelongue's operation for microcephalus, using the instruments recommended by him. The operation occupied twenty-three minutes, and the patient suffered very much from shock subsequently, but fortunately made an excellent recovery, and is to-day a living demonstration of the great benefit which in some instances has resulted from this operation.

My second operation was in the following June, upon a child thirteen years of age. The period occupied by the operation was twenty-two minutes, from the time the first incision was made until the wound was completely closed. The same instruments (bone forceps, conductor's punch and gouge) were used. The child was removed from the table in great shock, and died within twelve hours of the operation.

About this time many surgeons in many parts of the world had been following the lead of Lannelongue, and from every direction came the dictum that in order to avoid the great mortality which followed this operation, as little time as possible should be taken to complete it. This view generally maintained among the surgeons throughout the United States, and time was considered of more importance than any other factor involved. I could see no reason why the skull cavity could not be invaded with as little danger as the abdominal cavity, pro-

* From advance sheets of the International Medical Annual, 1800. Vol. xvii.

vided the contents of that cavity were protected from any injury; in other words, it occurred to me that the mortality must be attributed to the method of operating more than to anything else, and that the length of time occupied was not a factor demanding serious consideration. This view was more forcibly impressed upon me after my second operation, when I found the palm of my hand studded with blood-blisters, which had resulted from the use of the conductor's punch.

We are all familiar with the fact, that if an innumerable number of successive blows of even a moderate amount of force be produced upon a nerve filament, or along its course, even though the concussion is hardly perceptible at the time, the nerve or the tissues to which that nerve is distributed becomes numb. This is easily demonstrated in a common way by riding a bicycle for some distance over a cobble-stone or rough pavement, where the vibrations will be rapid, though not of much force. I have known this to result in complete loss of the use of both hands for the time being, the numbness in some instances lasting for several hours.

Those who have noticed the construction of the conductor's punch and the method of using it, will see at once that it is absolutely impossible to protect the brain from a blow when the bone is bitten through. It will be noticed that the under lip of the punch is three-eighths of an inch in thickness. It is oblong and rounded in shape, and when it is introduced underneath and grasps the bone it must, of necessity, press very firmly on the brain tissue. If we take the skull of a child, of ordinary thickness, we shall find some difficulty in biting away pieces of bone, and we shall find it necessary to use considerably more force than will be appreciated at first. Now, if we combine with this a desire to hurry through the operation, unconsciously, in our haste, taking a longer bite of bone in the grasp of the punch, we can realize the result when this piece of bone is bitten through. In most cases requiring the operation of craniectomy, the skull is thicker than normal, and of a harder and firmer consistency. Again, in most of these cases the brain is of a firmer consistency, and seems to fill the skull cavity completely, so that it is crowded up firmly and compactly against the skull at all points. Consequently, when a slight blow is received upon the brain tissue, it produces more shock than if other conditions prevailed.

I fail to see why, other things being equal, the brain should not be operated upon as free from risk of this kind as other vital parts of the body, and it was upon this idea that I devised a method of overcoming these series of concussions which, in my judgment, was the cause of the great mortality of skull operations. It was also a serious consideration to devise some way of performing this operation quietly and expeditiously without subjecting the patient to any risk. The results in the operations which I have enumerated have verified the conclusions which I drew. Of the one hundred and four craniectomies, six have died. Of the fifty-seven operations upon adults, none have died



from the shock of the operation. In many of them the operation was futile owing to the conditions under which the operation was performed. Among the deaths of the craniectomies, three have died from sepsis, one from hæmorrhage (opening the longitudinal sinus, which was diverted one inch from the median line), the other two died, one seven days and the other ten days after the operation, from complications arising from teething. In none of these cases have I experienced any of the bad results or any of the serious conditions which attended the first two cases. By that I mean that the patients have been removed from the operating table without showing any shock or unfavorable

symptoms other than those which always result from a serious operation. The pulse had remained good throughout; there was no pallor of the lips and skin, and the respiration was normal, even and regular.

About fifteen years ago the late Dr. Milton Josiah Roberts devised an electric saw for bone operations. The motive power and the saw were combined, and together weighed twenty-five to thirty pounds. The surgeon in using the instrument was compelled to lift this weight, which was pressed down, unavoidably, upon the skull. The force necessary to hold the instrument in position, combined with the weight of the in-

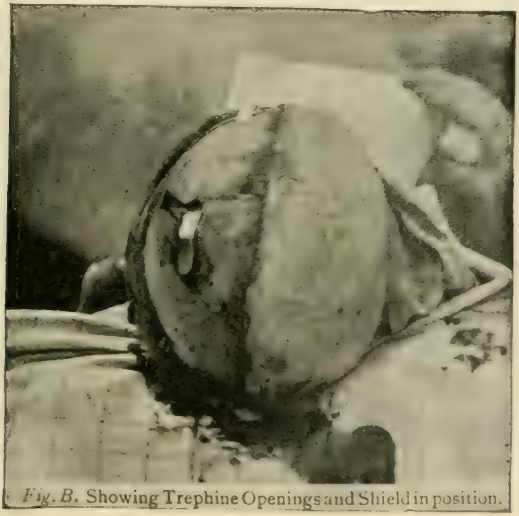


Fig. B. Showing Trephine Openings and Shield in position.

strument and the vibrations which resulted from the motor, were even more serious than the concussions which were produced by the conductor's punch. I witnessed several operations made upon adults with this apparatus by Dr. Roberts, and each operation was followed by most profound collapse and death. That the dangers involving bone surgery of the skull have not been exaggerated, I have but to refer those interested to the statistics upon the subject.

With this brief review I pass at once to a detailed statement of the technique of my method (Fig. 1).

The patient's head is shaved, and a roller bandage one inch wide and ten yards long, which has previously been thoroughly

wetted, is wound about the head, just above the eye-brows, just above the ears, and just below the occipital protuberance. This bandage is wound snugly, but not tightly, about the head until it is entirely used up. The numerous thicknesses of the bandage will act as a compress upon the blood-vessels when over this is tightly drawn a strip of rubber adhesive plaster of the same width.

One word in reference to the use of this combined bandage. The many folds of the muslin bandage act as a compress, and the muslin bandage also prevents the plaster from sticking to the scalp when we are ready to remove it. By using rubber adhe-



Fig. 1. POWELL'S ELECTRIC SAW IN POSITION FOR OPERATION.

sive plaster over the muslin bandage we are enabled to make and retain, step by step, a greater amount of pressure, and so control the hæmorrhage better than can be by the ordinary bandage. At least three turns around the head should be made with the rubber adhesive. The object of this band is to control hæmorrhage, which it has done most effectually in each one of my cases (Fig. A). The patient's head is then placed upon a sand-bag, slightly projecting over, and held firmly on either side by an assistant, so as to prevent rolling and to enable the surgeon to make a straight incision in the median line. The point of a sharp, stiff-backed knife is introduced at the upper border of the bandage in the median line of the frontal bone. It

is pressed down and well on to the bone through the periosteum, and the incision is carried along this median line to the upper border of the bandage at the occipital protuberance. A periosteotome is then introduced, and one-half of the scalp, including the periosteum, is dissected back until one-half of the upper skull is exposed down to the temporal muscles. As can be well seen, this incision is accompanied by what would seem to be a profuse hæmorrhage, lasting only a moment, as it is retained blood in the vessels obstructed by the bandage. The scalp is turned over and held out of the surgeon's way with a retractor. Buttons of bone are then removed with a trephine; I use two

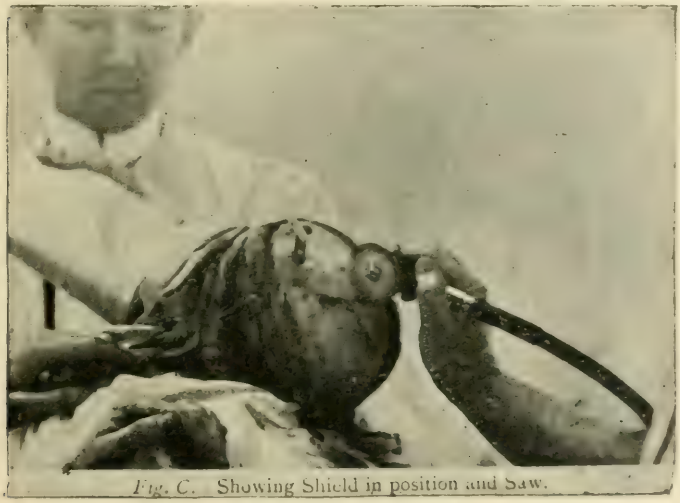


Fig. C. Showing Shield in position and Saw.

sizes, one, five-eighths of an inch for the openings near the median line; the other, three-eighths of an inch for the openings down near the ear. The larger openings are made at least an inch from the median line; one of them anterior to the coronal suture well forward, the other just anterior to a line drawn from the posterior part of one ear to the other. The lower openings, three-eighths of an inch, are about an inch and a half or two inches distant, approximating the lower border of the parietal bone and converging toward each other. These openings are shown in the accompanying diagram (Fig. B).

Sometimes, when the skull is elongated, the two larger openings are five and a half inches apart, and if the dura is adhe-

rent to the skull it may be necessary to make an intermediate opening. One of the shields here illustrated (Fig. B), made of German silver, three-eighths of an inch wide, and a thirty-second of an inch in thickness, and varying from four to seven inches, is slightly curved by drawing through the fingers, then introduced between the dura and skull, and carried from one of the larger holes above downward to one of the smaller openings and brought out. This shield protects the dura from any possible injury. The amount of bowing of the shield will depend upon the thickness of the skull: the object being that the end of the shield shall remain in apposition to the inner surface of the skull while it is being pushed onward (Fig. C). One



Fig. D. Completed Craniectomy.

of the buttons of bone which have been removed is then placed against the edge of the saw, and the cutting depth of the saw is regulated by the screw seen at the top so as to conform to the thickness of bone. The saw is then driven along this line on either side, so that the width of bone corresponding to the width of the two openings is cut through. The piece of bone is then lifted out as whole. The same step is then taken for the corresponding openings. A shield is then carried forward from the posterior incision to the anterior incision at its shortest approximating point. If obstruction is met, the shield can be redrawn and started from the other direction. This step is kept up until the obstruction is overcome and the shield projects through the

opposite opening, when both ends can be firmly held and the shield gradually pushed over until it lies well in the two larger openings. A strip of bone is then taken between these two points, and the width will depend upon the object of the surgeon. The sharp angles projecting upward anteriorly and posteriorly are then removed by the same method (Fig. D, and Fig. E). If the trephine has left any sharp spiculæ, they can be removed with an ordinary bone scoop.

If the cutting depth of the saw is properly adjusted, the surface left is perfectly smooth. The dangers to be avoided in this step are the opening in the sinuses and injury to the brain tissue.



Fig. E. Completed Craniectomy

I have on several occasions punctured the dura with the shield in breaking up the attachment between it and the skull. Upon one occasion, previously stated, I opened the longitudinal sinus. The opening left after cutting off the angle of the bone where the larger trephine has been used in an ordinary craniectomy measures about an inch and a half in diameter. When the operation has proceeded thus far, very little remains to be done which concerns the subject of this paper. Flaps in the dura can be made, and it can be turned back and the brain tissue inspected or invaded, at the surgeon's option. The edges of the bone

should be made perfectly smooth. There should be no projections and no spiculæ.

It has been my custom to keep the surface flooded with sterilized water at blood temperature during the entire operation, the idea being to prevent shock resulting from undue exposure and chilling of the brain if the room should be cold; and also to wash away the detritus resulting from the use of the saw, and to keep the saw from becoming overheated.

If it be the object of the surgeon to inspect a large area of brain tissue for the purpose of removing a tumor or emptying a cyst or abscess, and he wishes to remove a plate of bone, it



Fig. F. Showing line of Union after Operation.

can be readily done, as we may see, with only one line of connection between each opening. This plate can be kept in a normal saline solution at blood temperature, and replaced after operation. I have done this in one instance where the skull at its thinnest portion was five-eighths of an inch in thickness. In passing, I might say that this particular patient left the hospital seven days after operation, and is now alive and well, so far as surgical operation was concerned. If a drain is necessary to relieve an abscess or cyst, it can be brought out through one of the openings made by the trephine, and a counter opening made through the scalp. The operation being now practically com-

pleted, the scalp is folded back into position, and a few stitches of silkworm gut are taken to hold the edges of the wound in apposition; or we can hold them very readily and sufficiently snugly by the use of short strips of rubber adhesive plaster. I put in no drain in a case of craniectomy, and have at no time had any reason to do otherwise. Compresses of gauze, wet in a 2 per cent. solution of carbolic acid and wrung dry, in sufficient quantity to cover the entire skull, about half an inch in thickness, are thus applied; these being held in position by a roller bandage skull-cap. After the dressing is complete the combined bandage encircling the head is cut and removed.

There are a few points of interest in reference to this instrument to which I would call attention. The weight of the instrument is very little more, if any, than that of a surgeon's saw, and, also, the arrangement of the hand-guard is such as to allow the surgeon to have perfect control over his instrument in a position which makes him master of the situation; the entire weight of the hand and instrument being balanced on the little finger, which acts as a fulcrum, and enables the surgeon to move the saw backward and forward, as necessary, delicately and surely. Having obtained knowledge of the thickness of the skull in the case to be operated upon, we can readily set the gauge so as to prevent the saw from going in deeper than the thickness of the skull. In that way we shall undoubtedly guard the dura from injury, if we have not placed the shield properly beforehand. The electric current is transmitted through a cable (similar to that used on a dental drill) to the saw, and can be controlled by the surgeon through a button on a foot-plate, or by an assistant. The motion of the saw is steady, continuous, and free from vibration. The saw-blade is very thin; the teeth are widely set, so that the liability of fixing the saw-blade in the bone is remote. The amount of pressure necessary to drive the saw forward through the skull is infinitesimal. I have had different sized blades made for this saw to adapt it to the uses of bone surgery in general, wherever applicable, such as the removal of the head of the humerus, making incisions, removing exostoses, and particularly operations upon the spinal column. The working of this instrument is so delicate that a shaving from the edge of the skull can be cut the entire length of the incision and of the thickness only of ordinary paper.

12 WEST FORTIETH STREET.

A REPORT OF TWENTY-FIVE CASES OF LARYNGEAL DIPHTHERIA TREATED BY ANTITOXIN AND INTUBATION.

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Membranous croup is now regarded by most authorities as always diphtheritic, and while it is acknowledged that cases may occur which are non-specific, non-contagious in character, they are undoubtedly rare in number. The writer considers all cases of pseudo-membranous laryngitis, not of traumatic origin, as local manifestations of diphtheria and bases the treatment on that diagnosis. The clinical diagnosis was in all cases that of diphtheria and was based on the progressive, unremitting laryngeal stenosis, added to this, the presence of the Klebs-Löeffler bacillus.

The distinctive feature, in cases of laryngeal diphtheria, is this progressive laryngeal stenosis, manifested by a very definite train of symptoms as follows: hoarseness, aphonia, stridulous cough, stridulous respiration, restlessness, dyspnœa, and cyanosis.

Case I.—Joseph D., aet. seven years, previously healthy and well nourished, had been exposed to contagion. He complained of headache, general malaise, and had a harsh, croupy cough. A careful inspection of the throat revealed nothing abnormal, except a slight hyperæmia of the mucous membrane. Bacteriological examination revealed the presence of Klebs-Löeffler bacillus and also streptococci in great numbers. Symptoms of laryngeal stenosis set in and progressed rapidly until the patient became very cyanotic. He was intubated and injected with 1,000 antitoxin units (Behring's). His condition improved immediately. Stimulants were administered in large and frequent doses. The tube was allowed to remain five days. About the tenth day after the injection of the antitoxin, several joints became very much swollen and painful, which, however, soon subsided and he eventually made a perfect and permanent recovery.

CASE II.—Charles H., aet. four years, previous good health; he had been ill for three days with a croupy cough, coming on gradually, dyspnœa marked, great restlessness and beginning cyanosis. On each tonsil there was a greyish-white patch of pseudo-membrane. Treatment: 1,000 units of Behring's serum; intubation and stimulants. The patient's condition improved immediately, and after seventy-two hours the tube was removed. He became convalescent and made a rapid recovery.

CASE III.—Alice S., aet. three years. An inmate of the Home for the Friendless. She was convalescent from a severe attack of broncho-pneumonia, when she, unfortunately, became exposed to the contagion of diphtheria. Symptoms of laryngitis set in and she was promptly injected with 5 c.c. of serum, prepared by Gibier, of New York, and for a few hours she seemed to improve, but six hours after the injected, she died suddenly, probably from paralysis of the heart. Unfortunately, an autopsy could not be obtained.

CASE IV.—Clara R., aet. four years. Diphtheritic membrane on each tonsil, dyspnœa and somewhat cyanotic. On the third day of the illness, injection of Behring's serum 1,000 units. Intubation. Extubated on the fifth day. No pseudo-membrane visible. Rapid recovery.

CASE V.—Anna R., aet. four years. Presence of false membrane in fauces. Symptoms of progressive laryngeal stenosis. Injection of 1,000 units of Behring's serum on the third day of illness, and intubation. Removal of tube on the fourth day. Rapid recovery.

CASE VI.—Willie Y., aet. three years and eight months. Tonsillar and laryngeal diphtheria. Injection of 1,000 units of Behring's serum on the first day of the disease. Recovery without intubation.

CASE VII.—Fred K., aet. six years. Tonsillar diphtheria followed by symptoms of laryngeal stenosis. 1,000 units (Behring's) on the third day of the disease. Recovery without intubation.

CASE VIII.—Martha S., aet. four years and six months. Faucial and laryngeal diphtheria; dyspnœa severe and very cyanotic. Intubation and injection of 1,000 units of Behring's serum on the fourth day of the disease. The tube was allowed to remain two days. There were no complications, and the patient made a rapid recovery.

CASE IX.—Edna P., aet. four years and six months. Tonsillar and laryngeal diphtheria. Intubated and injected with 1,000 units (Behring's) on the third day of illness. Recovery.

CASE X.—Bertha T., aet. two years and four months. Faucial and laryngeal diphtheria. Intubated on the third day of the disease, and also injected with 1,000 units (Behring's). A pneumonia followed and the patient died two days later.

CASE XI.—Edna T., aet. four years and seven months, sister of Bertha T. Tonsillar diphtheria with laryngitis. Intubated and injected with 1,000 units (Behring's) on the third day. Extubated two days later. Recovered.

CASE XII.—James M., aet. five years. Extensive diphtheritic membrane visible in the fauces, laryngitis cyanosis, somnolent. Pulse extremely rapid and feeble, temperature subnormal. Treatment: Intubation and injection of 1,600 units (Pittsburg serum), free stimulation—hypodermic injection of strychnine and camphor. Marked improvement within a few hours. Extubated three days later. Recovered.

CASE XIII.—Conrad S., aet. five years. Tonsils and uvula covered by an extensive pseudo-membrane, dyspnœa marked; pulse scarcely perceptible and temperature 99° F. This patient had been ill for five days and was apparently dying from sepsis. He was given hypodermatic injections of strychnine and digitalin and 1,000 units of Behring's serum. Intubation was performed. After the operation, he rallied somewhat for a short time but subsequently died twenty hours after intubation.

CASE XIV.—Elsie S., aet. two years and two months. On the tonsils and extending almost over the whole pharynx a diphtheritic membrane could be seen. Dyspnœa, marked cyanosis and rapid pulse. Intubated and injected with 1,000 units (Behring's) on the fourth day of illness. The tube remained three days and with the exception of a transient albuminuria, this patient made an uninterrupted recovery.

CASE XV.—Anna K., aet. one year and two months. Faucial and laryngeal diphtheria with severe dyspnœa; a cyanosis. Intubation and 1,000 units (Behring's). Extubated two days later. Recovered.

CASE XVI.—Edwin F., aet. seven months, nursling. Intubated on the third day of the disease and 1,600 units (Pittsburg serum). Death from pneumonia two days later.

CASE XVII.—Hilda K., aet. four years, had been ill with tonsillar diphtheria for four days, when symptoms of laryngeal stenosis set in. She received 1,000 units (Behring's), and was intubated on the fifth day of the disease. The tube was allowed to remain four days. Recovered.

CASE XVIII.—Edna L., aet. four years. Both tonsils uvula and tonsils were covered by an extensive diphtheritic membrane. There was also aphonia, stridulous cough, dyspnœa and beginning cyanosis. Treatment: 1,000 units (Behring's) and intubation. Tube remained three days. Recovered.

CASE XIX.—Frank C., aet. eight years, had been ill for seven days with laryngitis. No exudate visible in the fauces, Klebs-Löeffler bacillus, however, found on bacteriological examination. Symptoms of stenosis progressed and intubation became necessary. Tube allowed to remain for several days, when it was expelled during a paroxysm of coughing. 1,000 units (Behring's).

CASE XX.—Edna E., aet. ten years, was treated for almost one week by a homeopathic physician who diagnosed the case as tonsillitis. When seen on the seventh day by the writer, she presented the following condition: both tonsils, palate and uvula covered by a pseudo-membrane, complete aphonia, whistling cough, dyspnœa, restlessness and cyanosis. Her pulse numbered about 120, temperature subnormal. The urine contained a large quantity of albumin, granular and hyaline casts. Treatment: Intubation, 1,000 units (Behring's), strychnine, digitalis and whiskey, followed by marked improvement and eventually perfect recovery. The tube was allowed to remain two and a half days.

CASE XXI.—Edna V., aet. eight years, almost presented the same picture as the preceding case, with the exception that the stage of restlessness had been followed by somnolency with extreme cyanosis. 3,000 units of P. D. & Co.'s, were given, strychnine and digitalis. Intubation. The patient at first rallied somewhat, but eleven hours later died suddenly of heart failure.

CASE XXII.—Gertrude S., aet. five years, had tonsillar diphtheria with the usual manifestations of progressive laryngeal stenosis. On the second day of the disease she was given 1,500 units of P. D. & Co.'s serum, and subsequently intubated. Recovered.

TABULAR ARRANGEMENT OF CASES REPORTED.

No.	Name.	Age.	Sex.	Location of Membrane.	Case of.	No. of Antitoxin Units Used. Day of Dis.	Time of Intubation, Day of Dis.	Time Remained.	Complications.	Result.
1	J. D.	7 y.	M	Larynx.	Dr. T. J. Elterich.	1000 units, Behring, 2d day.	2d day.	5 days.	Arthritis.	Recovered.
2	C. H.	4 y.	M	Tonsils and Larynx.	Dr. T. J. Elterich.	1000 units, Behring, 3d day.	3d day.	3 days.	None.	Recovered.
3	A. S.	3 y.	F.	Larynx.	Dr. T. J. Elterich.	500 units, Gibier, 1st day.			Bron. pneumonia Cardiac Paralys.	Died 1st day.
4	C. R.	4 y.	F.	Tonsils and Larynx.	Dr. C. Butler.	1000 units, Behring, 3d day.	4th day.	2 days.	Erythema.	Recovered.
5	A. R.	4 y.	F.	Fauces and Larynx.	Dr. J. Wessels.	1000 units, Behring, 3d day.	3d day.	4 days.	None.	Recovered.
6	W. Y.	3 y.	M.	Tonsils and Larynx.	Dr. J. C. Boggs.	1000 units, Behring, 1st day.			None.	Recovered.
7	F. K.	9 y.	M.	Tonsils and Larynx.	Dr. T. J. Elterich.	1000 units, Behring, 3d day.			None.	Recovered.
8	M. S.	4½ y.	F.	Fauces and Larynx.	Dr. J. N. Boggs.	1000 units, Behring, 4th day.	4th day.	2 days.	None.	Recovered.
9	E. P.	4 y.	F.	Tonsils and Larynx.	Dr. J. N. Boggs.	1000 units, Behring, 3d day.	3d day.	2 days.	None.	Recovered.
10	B. T.	2 y-4 m.	F.	Fauces and Larynx.	Dr. J. C. Boggs.	1000 units, Behring, 3d day.	3d day.	2 days.	Pneumonia.	Died 5th day.
11	E. T.	4 y-7 m.	F.	Tonsils and Larynx.	Dr. J. C. Boggs.	1000 units, Behring, 3d day.	3d day.	2 days.	None.	Recovered.
12	J. M.	5 y.	M.	Tonsils and Larynx.	Dr. Slonaker.	1000 units, Pittsburg, 4th day.	4th day.	3 days.	None.	Recovered.

13	C. S.	5 y.	M.	Fauces and Larynx.	Dr. T. J. Elterich.	1000 units, Behring, 5th day.	5th day.	1 day.	Sepsis.	Died 6th day
14	E. S.	2 y-2 m	F.	Fauces and Larynx.	Dr. J. N. Boggs.	1000 units, Behring, 4th day.	4th day.	3 days.	Albuminuria.	Recovered.
15	A. K.	1 y-2 m	F.	Fauces and Larynx.	Dr. Robertson.	1000 units, Behring, 5th day.	5th day.	3 days.	None.	Recovered.
16	E. F.	7 m.	M.	Tonsils and Larynx.	Dr. Neff.	2000 units, Behring, 3d day.	3d day.	2 days.	Pneumonia.	Died 5th day
17	H. K.	4 y.	F.	Tonsils and Larynx.	Dr. Hechelman.	1000 units, Behring, 5th day.	5th day.	4 days.	None.	Recovered.
18	E. L.	4 y.	F.	Fauces and Larynx	Dr. T. J. Elterich.	1000 units, Behring, 4th day.	4th day.	3 days.	None.	Recovered.
19	F. C.	8 y.	M.	Larynx.	Dr. Miller.	1000 units, Behring, 7th day.	7th day.	2 days.	None.	Recovered.
20	E. E.	10 y.	F.	Fauces and Larynx.	Dr. T. J. Elterich.	1000 units, Behring, 7th day.	7th day.	2½ days.	Sepsis Albuminuria.	Recovered.
21	E. V.	8 y.	F.	Fauces and Larynx.	Dr. Hoch.	3000 units, P.D.&Co., 4th day	4th day.	11 hrs.	Heart Failure.	Died 4th day
22	G. S.	5 y.	F.	Tonsils and Larynx.	Dr. T. J. Elterich.	1500 units, P D. & Co., 2d day	3d day.	2 days.	None.	Recovered.
23	V. L.	18 m.	F.	Tonsils and Larynx.	Dr. T. J. Elterich.	1500 units, P. D. & Co., 2d day	2d day.	2 days.	None.	Recovered.
24	J. B.	3 y.	M.	Larynx.	Dr. T. J. Elterich.	1600 units, Pittsburg, 3d day.	3d day.	2 days.	None.	Recovered.
25	A M.	4 y	F.	Tonsils and Larynx.	Dr. T. J. Elterich.	1500 units, P.D.&Co., 1st day			None.	Recovered.

CASE XXIII.—Val. L., aet. eighteen months. Tonsillar laryngeal diphtheria. Intubation and 1,500 units P. D. & Co.'s serum on the second day of the disease. Recovered.

CASE XXIV.—John B., aet. three years, had a diphtheritic laryngitis, the diagnosis being confirmed by bacteriological examination. Intubated. 1,600 units Pittsburg serum. Recovered.

CASE XXV.—Anna M., aet. four years. Tonsillar diphtheria with commencing laryngeal stenosis. 1,500 units of P. D. & Co.'s serum on the first day of the disease. Recovered without intubation.

Three cases were injected on the first day of the disease; three on the second; nine on the third; five on the fourth; three on the fifth, and two on the seventh. The tube was worn two and a half days on an average. Four cases required no intubation.

Five cases terminated fatally, a mortality of 20 per cent. When we consider that the mortality with other methods of treatment reached as high as 90 per cent., and reduced by intubation to about 65 per cent., we must acknowledge that the results in the foregoing cases, are highly gratifying. Antitoxin should be used as early in the disease as possible and will often prevent the more serious operation of intubation. This operation should not be delayed too long. Restlessness and unremitting dyspnœa are indications for intubation. The tube should be allowed to remain until the diphtheritic membrane has disappeared from the throat and the expectoration has become thin and viscid.

70 MADISON AVENUE.

Goitre in a New-born Infant Cured by Thyreoid Treatment of the Mother.—Mossé communicated to the Académie de médecine, April 12, 1898 (*Revue mensuelle des maladies de l'enfance*, June; *American Journal of the Medical Sciences*), the case of a weak, cachetic new-born infant presenting a marked bilobed goitre. The mother, herself goitrous, was in excellent health, but mentally weak. The treatment of the mother consisted in the daily administration of a gramme and a half of thyreoid body. At the end of a month and a half her goitre had almost totally disappeared, and in the infant the cure was complete. A later course of treatment considerably improved the general condition of the baby.—*New York Medical Journal.*

THE SUCCESSFUL TREATMENT OF CHOREA WITH TRIONAL AND SULPHONAL.

BY J. HOWE ADAMS, M.D.,
Philadelphia, Pa.

It is a very important advance in medicine which adds to the physician's armamentarium any therapeutic agent for the relief of such a well-known condition as chorea. As a rule the physician expects that Fowler's solution will do well in this distressing condition; he expects to see it act almost as a specific. When therefore he meets a case or a series of cases in which this excellent drug has no effect upon the course of the disease, or if it has any effect it is that apparently of making the disease worse, the physician is apt to feel a little panic-stricken. Having had experience recently in a number of cases of chorea in which Fowler's solution did not seem to act with happy results, it was my opportunity to experiment with various drugs until I hit upon two medicines which seemed most successful in their action.

In the first place, our knowledge of the value of arsenic in disease rests solely upon clinical observation which has abundantly established its use in certain diverse affections. It has been known for many years that Fowler's solution acted very happily in certain nervous affections, especially in chorea. And yet we have not passed beyond the original suggestions of Martin which he published as far back as 1813; this statement is interesting to read at the present day. He reports that he began "with five drops and increased one drop every day, until it might begin to disagree with the stomach or bowels." It is common in this affection to add iron and other tonics to the arsenic, but undoubtedly it is better practice, however, to administer the latter separately so that the dose may be steadily increased until œdema or other manifestations betray its decided action.

It is important to remember that the general care of the case is just as necessary as the administrations of medicines. A child with chorea should never be allowed to go to school, and under no circumstances should be subjected to punishment or to ridicule on account of its movements. There should be careful attention given to the diet and general nutrition of the patient.

The food should be simple and supporting, and all stimulants, such as tea or coffee, should be absolutely prohibited. Exercise in the fresh air is desirable, but its effect should be carefully watched; the patient should never be allowed to become fatigued. In severe cases the "rest cure" might be employed, in which the patient is put to bed and complete mental and physical rest is secured. Gentle massage for fifteen or twenty minutes a day is also of benefit in the severer cases. The daily use of cold sponging or warm baths is decidedly beneficial.

In such cases as have rheumatic histories, salicylate of soda is often very efficient, especially where other drugs which are usually employed are of no effect. Cases have been reported in which the use of arsenic has been continued for several weeks without the slighest improvement when the patient has an attack of subacute rheumatism for which salicylate of soda in full doses was given, with the result of stopping the choreic symptoms promptly. Again, many authorities believe that failure to produce good results with arsenic is due often to the fact that too small doses are used. Some authorities have pushed the dose of the drug cautiously up to twenty drops of the solution three times a day in a child of eight years. This is probably the limit for the use of arsenic.

Of course the natural course of the disease must be remembered, and those drugs which are taken after the third or fourth week are much more likely to be thought beneficial than those used in the early part of the attack.

Having had experience with a number of cases in the past ten years in which chorea did not seem to be benefitted by the ordinary drugs in common use, I have been in the habit of collecting reports of all cases in which other remedies were tried with the result that I have gathered quite an imposing list of drugs. It is a good rule to remember in medical matters that when a long list of remedies are proposed for a disease that the most of them are inefficient. This is the list, however, which I have compiled and which is, as far as I know, the most complete list in existence on this subject. It comprises the results of ten years of reading, and is as follows:

Hydrobromic acid, aconite, alcohol, carbonate of ammonium, valerianate of ammonium, amylene hydrate, nitrite of amyl, sulphate of aniline, antimony, antipyrin, arsenic, asafœtida, atropia, shower-baths, sulphuretted potash baths, sulphur baths, bella-

donna, bromides, calabar bean, chloride of calcium, camphor, monobromated camphor, cannabis indica, cantharides, chloral, chloralmid, chloroform, cimicifuga, cocculus, black cohash, colchicum, conium, sulphate of copper, ammoniated copper, curare, Jamaica dogwood, electricity, eserine, ether spray, ergot, galvanism, gelsemium, hyoscyamus, hypophosphites, ice-bags over the spine, the various preparations of iron, lobelia, lupulin, morphine, musk, muskroot, nux vomica, cod-liver oil, opium, oxalate of cerium, phosphorus, physostigma, picrotoxin, bromide of potassium, iodide of potassium, quinine, nitrate of silver, oxide of silver, arseniate of sodium, bromide of sodium, salicylate of sodium, cold sponging, strychnia, sulphonal, tartar emetic, trional, valerian, veratrum viride, bromide of zinc, cyanide of zinc, iodide of zinc, oxide of zinc, phosphide of zinc, sulphate of zinc, valerianate of zinc, exalgin.

In the hands of many authorities antipyrin and strychnia are considered the most valuable drugs in the treatment of chorea where arsenic fails. From twenty to thirty grains of antipyrin have been given daily in divided doses to a child eight years of age, and there are a number of cases reported in which striking improvement has followed the use of this medicine given in the full doses mentioned. In the same way to a child of the same age strychnia, commencing in doses of one-sixtieth of a grain three times a day with a dose cautiously increased, is often of benefit. On the other hand, cimicifuga, as originally proposed by Dr. Young in the simple chorea of childhood, bears an excellent reputation. It should be given in the form of a fluid extract made from the fresh drug, for this drug deteriorates with age, until it produces physiological effect, which are giddiness, with intense headache, a mild irritation of the stomach and with more or less general relaxation. It is well at the same time to combine with this well regulated purgative, medicines to subdue any cerebral congestion and also the use of tonics.

L. Y. Guthrie divides cases of chorea into two different groups, based on the classification of Weir Mitchell. Mitchell divides the cases of chorea into five groups, according to the motor symptoms: 1. Cases in which there is at some stage absence of the motions when at rest. 2. Cases in which the movements are less when the child is at rest, but are aggravated by voluntary movements. 3. Cases in which the severe choreiform movements disappear during voluntary movements. 4.

Cases in which voluntary exertion does not influence the movement. 5. Cases presenting at different stages more than one of the above types.

Guthrie, as above stated, divides this classification into two classes: 1. Sthenic or explosive. 2. Asthenic or pseudo-paralytic. For both groups he believes that rest in bed is essential at the outset. But later he regards sedative drugs, such as chloral, the bromides, antipyrin, etc., are useful in the first group, while tonics like quinine, arsenic and strychnia are useful in the second.

The latest theory in regard to chorea is that it is an infectious disease; reports have been made of bacteria being discovered in the nerve tissue in a few cases examined for this purpose. Some of these reports are open to the objection, however, as to their thoroughness and accuracy of their results. Whatever may be the truth in regard to these investigations, it is certain that as yet no definite organism has been isolated. But there are many good reasons for believing that this disease is an infectious one. I notice that in the latest text-books on this subject it is classed among the diseases under the title "Neuroses, Dependent upon Infection." Chorea comes on gradually with prodromal pains; it continues for a period, and frequently stops of itself, even if no treatment is instituted. The fact that it is also a disease that is common at certain periods of the year—spring and fall—points towards the same conclusion.

In a case under treatment at present—that of a little girl nine years of age—I am able to state that she has made an excellent improvement under the use of trional. The child was not confined to bed all the time, but she was put to bed very early at night, and spent much of her time at rest. She was bathed regularly and fed well. I ordered that not much meat should be given her, but the diet should consist more of vegetables and of fruits. I am a great believer in the use of milk in these cases, and believe that it should be given in large amount. Milk seems to be a peculiarly excellent food in all cases of nervous affections, and can be given freely. In the case of this little girl, the choreic movements seemed to increase under the administration of Fowler's solution. The movements became more violent, the patient could not sleep, and was becoming rapidly exhausted from sleeplessness and the constant motion of the body. In a number of former cases of this kind the bromides

and chloral had been used, so in this case trional was given in two-grain doses every four hours. Larger doses can be given if necessary, but it so happened that almost at once the administration of this drug was followed by good results, ending in the ultimate recovery of the patient. I have tried it since in several cases with as happy results. On inquiry among nerve specialists who have had the handling of a large number of these cases, I find that trional and sulphonal have very excellent reputations. Given in the proportion of two-grain doses every four hours for a child of about ten years of age, these drugs can be increased or diminished as the case may indicate. In my hands the use of these two drugs stands next to the use of Fowler's solution and ahead of the bromides and strychnia.

The Disinfection of Rooms.—Novy and Waite (*Medical News*), conclude a paper upon the above subject with the following general directions: (1) All cracks or openings in the plaster or in the floor or about the door and windows should be caulked tight with cotton or with strips of cloth. (2) The linen, quilts, blankets, carpets, etc., should be stretched out on a line in order to expose as much surface to the disinfectant as possible. They should not be thrown into a heap. Books should be suspended by their covers so that the pages are all open and freely exposed. (3) The walls and floor of the room and the articles contained in it should be thoroughly sprayed with water. If masses of matter or sputum are dried down on the floor they should be soaked with water and loosened. No vessel of water should, however, be allowed to remain in the room. (4) One hundred and fifty centimetres (5 ounces) of the commercial 40 per cent. solution of formalin for each 1,000 cubic feet of space should be placed in the distilling apparatus and as rapidly distilled as possible. The key-hole and spaces about the door should then be packed with cotton or cloth. (5) The room thus treated should remain closed at least ten hours. If there is much leakage of gas into the surrounding rooms a second or third injection of formaldehyde at intervals of two or three hours should be made.

Clinical Memoranda.

ONANIE INFANTUM: CLITORIDECTOMY—RECOVERY.

BY LOUIS FISCHER, M.D.,

New York.

An infant, D. C., about nine months old, nursling, was brought to the Children's Department of the West Side German Dispensary in October, 1896. The mother complained that the child was very restless, seemed to be irritable and cried a great deal. She laid particular stress on a peculiar rubbing of the legs and thighs, which had lasted for several weeks.

She begged to have the child carefully examined as she suspected some malignant trouble. The further history of the case showed that the appetite was fair, the bowels were quite regular, the child had not suffered with any previous illness, and was otherwise quite normally developed. Dentition had already commenced. The child's body seemed to be well nourished, and from external appearances seemed to be quite healthy. There was no evidence of rickets. The temperature of the child was 99° in the rectum; pulse, 110; respiration was normal. The child was undressed and examined, and nothing of an abnormal condition was noticed. The child appeared quite raw between its thighs, and judging from the appearance evidently had a slight vulvitis. There was no vaginal discharge. The child was put on the expectant plan of treatment, and the mother ordered to report once a week. The child was seen regularly for a period of one month by Dr. C. Stock and myself. We noticed that not only was this external irritation of the vulva kept up in spite of local treatment, but that the child appeared very irritable and had distinct periodical masturbations. These attacks occurred more often when the child was placed on a bed, or a sofa, or on the floor, and consisted of a distinct rubbing of the thighs for several seconds, sometimes lasting a minute and more; the child's face becoming very much congested, the eyes bulged, the hands assumed a distinct cramp-like character, and this attack would be followed by rotary movements, in which the whole body seemed to participate. The attack usually ended by the child falling asleep from distinct exhaustion, the sleep lasting anywhere from one-half to

several hours. It was a very frequent occurrence to find the child's hand between its thighs, and when removed therefrom, would usually cry as though having a distinct craving or itching in this particular region.

The diagnosis was distinctly that of *onanie infantum.* It was found absolutely impossible to keep the child's thighs apart, although several times various wedges such as padded sterilized gauze were used to prevent friction of the parts.

The hygienic condition was the essential factor in the treatment pursued and thus great stress was laid on keeping the parts affected as dry and clean as possible. The mother of the baby was warned concerning the nature of the disease so that she could fully appreciate the grave responsibility incurred in neglecting this condition.

MEDICATION.—The baby was put on the following: Kali bromat., ʒ ss; chloral hydrat. ʒ ss; emuls. amygd. dulc. ℥ ii.

M. D. S. Teaspoonful every two hours until the full antispasmodic effect was manifested. In fact I aimed to produce absolute quiet of the parts by keeping the child in a semi-stupified condition. Small doses of cannabis indica were also given. Opiates were applied locally, and also cooling lotions, such as liq. plumbi et opii, and also powders (salicylated talcum) to counteract and allay the itching. Prolonged bathing of the parts in both very warm water containing a saline, and later we changed to absolute cold baths. Thus each form of treatment was given due weight and consideration.

We discarded everything in the way of irritant clothes to obviate friction from the child's clothes.

The clitoris was found to be firmly adherent, and in fact so irritable that during the examination the slightest touch or irritation of the same would provoke a distinct form of masturbation. After almost all medication of several months' duration was tried there was neither an amelioration of these attacks nor did the child seem to improve.

I then informed Dr. H. J. Garrigues, who was in the building of the condition of this child, and asked him to kindly see her.

He examined her and found the prepuce of clitoris firmly adherent and believed that all the trouble was due to it. He advised the complete removal of the clitoris, and accordingly the child was ordered to St. Mark's Hospital and clitoridectomy was

performed. This was in December, 1896. Dr. Garrigues advised keeping the parts very clean after the operation and the wound healed very rapidly. At the time of the operation the child was fourteen months old. The child was watched for a period of almost two years and the attacks ceased entirely. She has remained well ever since. I might add that at one time I suspected the possibility of the ordinary pin-worms (ascarides lumbricoides) as the cause of the trouble, but then after the usual santonine and calomel treatment and the absence of worms I excluded this form of irritation as the cause of the disease. The unusually brilliant result attained prompts me to publish this case with the hope that some equally desperate case of onanism might get the benefit of our experience.

187 SECOND AVENUE.

ENORMOUS DOSES OF LAUDANUM TAKEN BY AN INFANT.*

BY WALTER F. BOGGESS, M.D.,

Professor of Medicine and Diseases of Children in the Kentucky School of Medicine, etc., Louisville, Kentucky.

I desire to report a rather singular case seen within the last two weeks. I was called to the house to see a little child nine months old, very small for its age, not weighing more than eight or nine pounds, yet it seemed to be perfectly developed. It was a bright, intelligent-looking baby, and seemingly well nourished, although, as I have said, very small for its age.

Upon inquiring of its mother as to the trouble with the baby, she said she sent for me as the child had paroxysms of colic and had been having them ever since it was three months old. She had now weaned the baby, and was giving it cow's milk with barley water or lime water, and that the colic had been so bad ever since the child was three months old, that she had resorted to the use of laudanum to quiet it, that this drug was the only thing she had found which gave relief. I asked how much laudanum she was in the habit of giving the child, and she stated that during the six months that the baby had colic that it had received from four to twenty drops of laudanum

* Reported to the Louisville Clinical Society.

five or six times a day. I was astonished at the amount of the drug that the little one could take, but she had undoubtedly been giving that child laudanum for six months altogether, beginning with four or five drops and running up gradually to twenty drops, four to six times a day. This would amount to one and a half to two drachms in the twenty-four hours.

I simply corrected the child's diet, gave it cow's milk properly prepared as to amount of proteids, amount of fat, sugar, etc., and after a little while I seemed to get a milk which was suitable, and the colic disappeared. I saw the child a few days ago, and it has been taking two or three drops of laudanum at a dose occasionally, but not regularly, since my first visit. The drug was not entirely withdrawn, but the quantity was reduced from twenty drops four to six times a day to two or three drops, as might be needed.

The case is interesting, showing the enormous amount of opium that a child can take, becoming really a morphinomaniac. The mother said that while the child was under the influence of the drug it was very bright; but during the intervals, when the effect of the opium had about worn off, it would become fretful, then, after receiving another dose, it would again become bright.

DR. J. M. KRIM in discussing the case said that he thought it probable that the laudanum given in this case was what is called "half-strength," or one-half as strong as ordinary laudanum. There were very few druggists who sell across the counter to the laity full strength laudanum.

DR. P. F. BARBOUR.—It is by no means unusual to find children with colic treated with opium until they become opium habitués. While I have seen several cases in children who did not take so much of the drug as in the case reported, still I have seen a number where it has been a difficult matter to break them of the opium habit. I remember a case in the Children's Hospital where I had complete control of the child, in which it was necessary to give the child paregoric every three hours in order to keep it and the rest of the hospital in anything like a comfortable condition. During the time when the drug was being reduced the child cried almost incessantly. This is the trouble that most physicians have encountered in treating opium habitues (children), that they will cry nearly all the time. We can understand that

as the adult complains of pain when leaving off opium, so the child suffers the same pain. My own experience in the treatment of these cases is not very large, and I hope it will never be any larger, because they are disagreeable cases to manage. I have no doubt that the opium habit was the cause of this child being undeveloped. Dr. Boggess is to be congratulated upon reducing the quantity of laudanum from twenty drops to two drops in a few weeks. I have never been able to do that either in the adult or child.

DR. T. P. SATTERWHITE.—I remember that Dr. Samuel Brandeis and myself had a case in which for several months a child had taken opium frequently during the day and night. We stopped it abruptly, and I never have seen such distress as that child had for four or five days. But it never took any more opium after coming under our observation.

DR. EWING MARSHALL.—I have found in my practice a great deal of trouble resulting from babies having been given laudanum and paregoric, usually by mothers or nurses. We do not see as much of it in private practice, however, as we do among the poorer classes and in hospitals. Occasionally the nurse will give a baby that is fretful and troublesome a dose of laudanum, or what Dickens calls the "black drops," to keep the child quiet for a time.

DR. FLORENCE BRANDEIS.—I have never seen a case where laudanum was continued for a great length of time, but remember while in Vienna seeing a child that had taken toddies for ten weeks. It had an attack of acute digestive disturbance and was taken off milk and put on toddies. The physician failed to return and the mother continued the toddies for ten weeks, when some trouble was experienced in withdrawing the whiskey.

DR. CARL WEIDNER.—I have never seen a case where opium had been given to the degree stated by Dr. Boggess in a child, still we all know that opium in some form of mixture is used by the laity to a tremendous extent. In the cases I have seen I did not hesitate to cut off the use of opium at once. I would use other remedies, such as chloral or bromides to overcome the distressing effects, but I would cut off the opium at once. I know that druggists keep two grades of laudanum, and it is well worth while to inquire about this, whether the drug used in his case was full strength or half-strength. And this also brings to

mind the necessity of having a law to prevent the sale of all these strong poisons to the laity.

DR. J. M. KRIM.—There is already existing a state law which is in effect that every druggist shall keep a book in which he is compelled to enter the name of the person purchasing the drug, the purpose for which it is to be used, etc., but notwithstanding this the druggists continue to sell poisonous substances to anybody who has the price, at least this seems to be true. I believe the dosing of little ones with opium now is infinitely less than it was formerly. In former years parents used the old fashioned Godfrey's cordial, paregoric, laudanum, and Dewee's mixture. Midwives were largely responsible for the introduction of these mixtures to the laity. The midwives' instructions to mothers are, if the child whines or becomes fretful, give it a few drops of Dewee's mixture and it will soon go to sleep.

DR. W. F. BOGGESS.—The only treatment I instituted in this case was to regulate the diet of the child, giving it milk which it could digest, prepared according to a well known formula, *viz.:* three parts milk, two parts cream, one part lime water, two or three parts of sugar water, which was well borne and evidently well digested, as the little one began to improve almost immediately. I gave it in addition to that $\frac{1}{120}$ grain of strychnine with a little dermatol to prevent diarrhœa. The dose of laudanum was gradually lessened to five drops, then to two drops, until now the child is taking no laudanum and is in better condition than it has been for months. In withdrawing the opium in such cases I think it is always advisable to administer small doses of strychnine.

Scarlet Fever.—Rotch says scarlet fever is the most irregular of all the exanthemata in its virulence and in the manifestations which it presents in different individuals. The skin appears to be the chief vehicle of the contagion, which has a wonderful tenacity for clothing and other articles, and may be capable of reproducing the disease for many months. In contradistinction to measles, which is known to be highly infectious in the early stage, scarlet fever appears to be most infectious in the latter stages, and the contagium is most likely to be disseminated during the stage of desquamation.—*Monthly Cyclopædia of Practical Medicine.*

THE
ARCHIVES OF PEDIATRICS.
DEVOTED TO THE
DISEASES OF INFANTS AND CHILDREN.
MAY, 1899.
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THE OPIUM HABIT IN CHILDREN.

We referred in these pages some time since to the disastrous results which sometimes follow the improper administration of opium in pediatric practice. No other drug in the *materia medica* requires more intelligence and discrimination in its use. This being true in the hands of skilled physicians, it is self-evident that it cannot be used by the laity with impunity. Many deaths are unquestionably caused by it every year, while the number of babies who are forced into the opium habit is appallingly large. At the Babies' Hospital in New York careful investigation recently showed that over half of the patients received under six months of age had been systematically drugged with opium in the form of paregoric or soothing syrup. Attention is again called to the subject by a discussion upon another page of the present number.

An infant may become as firmly addicted to opium as an adult, and feels as keenly its withdrawal. Sudden stopping of the drug is marked by restlessness, wakefulness and every indication of suffering and distress. We have seen an infant to whom paregoric had long been given regularly by a nurse, in a state bordering upon a frenzy twelve hours after the nurse's enforced absence.

Infants acquire the opium habit in one of three ways: through the mother, who does not realize the harm she is doing, but resorts to soothing syrup or some other opium preparation to obtain quiet and rest for herself; through the nursery maid or other attendant who neither knows nor cares what the result may be so long as she is spared from trouble; through the monthly nurse, many of whom make capital upon their ability to keep a child quiet.

In the first of these cases the doctor is often at fault in advising the administration of paregoric for the minor aches and pains of the infant. For the relief of pain no drug equals opium. When actual pain is present, it may be given to children with perfect propriety. Condemnation can not be too strong, however, against its use for the lesser ills and aches. It should never be used for sleeplessness, unless due to actual pain. It is so prompt and effective in its action that the mother is tempted to resort to it again and again. It is unwise to allow a mother to suppose that she can use paregoric. If it is indicated, let it be prescribed or left diluted and ready for use. A few tablets may be carried, each representing ten minims of paregoric. These can be left with the assurance that no more will be given than is intended, and the mother will be in ignorance as to their exact nature. When a child is cross and irritable, the temptation to the mother to repeat an opiate is very great, and should be guarded against as far as possible.

Among children's nurses the habit of resorting to opiates is unfortunately very common and widespread, and accounts for many obscure and unexplained symptoms among their charges. A nurse who boasts much of her ability to keep an infant quiet, be she a nursery maid or a monthly nurse, should be an object of suspicion. It is rare that positive proof can be obtained, but the circumstantial evidence is frequently very strong. The presumption is strong when an obstetric nurse habitually has docile and abnormally quiet infants who become restless and wakeful a day or two after she leaves the house. The mother usually

blames herself, and attributes it to lack of knowledge and experience on her own part. She is prone to have profound respect for the superior ability of the nurse. Too often the true explanation of the baby's change is an entirely different one.

While it would be a great injustice for the physician to be suspicious of every nurse, and cruel to charge such practices without ample warrant, he should, nevertheless, have ever in mind such possibilities. He should not be blind to the fact that the opium habit is not uncommon among little children, and he should never be the means of establishing it by injudicious advice to mothers and nurses.

CONVALESCENCE.

Convalescence is in some regards the most trying part of an illness for patient, nurse, and physician. This is particularly true in the case of children. During the days when it is necessary to keep a child who feels comparatively well in bed, the burdens of the mother and nurse are sometimes doubled. Under such circumstances and in the case of a child but moderately sick, the character of the toys and playthings is well worthy the attention of the attending physician. They should be simple in construction so as not to require much thought in understanding them. They should be few in number to avoid fatigue, for too many toys wearies the child as too many callers wearies the older invalid.

Too many toys at a time, too much amusement, too much attention, may weary a weak, sick child depressed by illness, rendering him irritable, prolonging convalescence, and delaying recovery. The toys may be changed frequently if the little one tires of them, but only a few should be given to him at a time. So long as he will lie quietly and is amused with a simple toy, by all means allow him to remain so. Do not force him to unnecessary activity, either mental or physical. Many a child has been seriously retarded in his convalescence by being over amused, and receiving too constant attention.

The difficulty of finding articles which have slipped from the hand has been experienced by everyone who has been confined to the bed. It is particularly irritating to children. It can frequently be overcome by stretching a cord across the bed two or three feet above the child. The toys may be suspended from this cord or tied to a longer cord so that they are easily recovered when lost.

The diseases of childhood are so largely infectious in character that such toys should be used as can be boiled or destroyed after their little owner has recovered. The habit of putting everything to the mouth, which is so universal among young children, renders the toys used during illness especially dangerous agents of infection.

THE SURGICAL TREATMENT OF TUBERCULOSIS.

In speaking of the advances that have been made in the treatment of certain diseases during the past half century, the *British Medical Journal* refers particularly to the fact that the treatment of surgical disorders in childhood has always been an important part of general surgery. In the earlier years of the Queen's reign not only was the mortality produced by "strumous" disease of bones and joints enormous, but the fact that of those who recovered so large a proportion had undergone amputation, or were left with crippled limbs and ruined health, was a veritable *opprobrium chirurgiæ*. Modern surgery has diminished immensely the number of cripples and the tale of deaths. Amyloid disease of the viscera, once a common consequence of long-continued suppuration, is almost a pathological curiosity. This is due, the writer says, to the application of antiseptic methods and to a more intelligent system of after-treatment, for which we are largely indebted to Thomas, of Liverpool, and Sayre, of New York. "The experimental study of the specific infection of tubercle," he says, "has already shown the nature of the precautions which are required for its

prevention, and the administrative measures which must be taken in order to put this knowledge into practice are engaging the attention of health authorities throughout the civilized world. If in some respects the prophylactic methods are as yet crude and imperfect, in others very considerable practical success has been attained. Greater and more general success will certainly attend longer experience and a more widespread education of public opinion."

It is clear that the beneficent influences to result from the Craig Colony for Epileptics were not over-estimated by its founders. As the work of the Colony grows and its results become more apparent, its power for good becomes more clearly demonstrated. The annual reports of the institution as well as evidence of other kinds confirm these statements. The account appearing on another page of this number of a visit to the Colony is very interesting, and is but additional evidence of the good it is accomplishing.

Congenital Ovarian Cysts in Young Infants.—F. Cima (*La Pediatria*), narrates a case in which an infant fourteen months of age was found to be suffering from great distension of the abdomen. The circumference a little above the umbilicus was 59 cms., palpation revealed some resistance rather than the distinct feeling of a tumor, there was evident fluctuation, and percussion gave a tympanitic note in the flanks. At first it was thought that the child was suffering from ascites; but the globular form of the abdomen without bulging at the flanks, the normal condition of the vascular and respiratory systems, the absence of fever, and the existence of normal liver and spleen led to the exclusion of this malady. From the history it appeared that the abdominal enlargement had been first observed when the infant was four months old. An exploratory puncture of the abdomen was made and 225 c.c. of slightly turbid yellowish-green fluid, alkaline in reaction and with a specific gravity of 1027, was drawn off. Cultures of this fluid remained sterile. Operative interference was not permitted; but the author thinks that the clinical facts warrant the diagnosis of congenital ovarian cyst.—*Scottish Medical and Surgical Journal.*

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Formulaire d'Hygiène Infantile Collective. *Hygiène de l'enfant à l'école, à la crèche et à l'hôpital, par le* Dr. H. Gillet, *ancien interne des hôpitaux de Paris, chef du service des maladies des enfants à la Policlinique de Paris.* Paris: J. B. Bailliére et Fils. Pp., 288. Price, 3 fr.

This is an excellent little book. The author acts upon the theory that an infant who starts in life with ordinary strength, if reared under proper hygienic conditions, will escape most of the ills from which the ordinary child suffers. The book is made, therefore, to cover a variety of subjects. The prevention and hygienic management of the various contagious diseases, while they occupy little more than half the book, form by no means its only valuable feature. Not only is the hygienic and constitutional treatment of these diseases considered, but the methods of their prevention are given in detail, together with an excellent chapter on disinfection. School hygiene also receives attention, and is considered in a most satisfactory manner. A chapter is devoted to the hygiene of hospitals for very young infants and another to general hospitals for children, and still another to the family hygiene of the child. The book is, on the whole, a valuable one.

Progressive Medicine.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., *Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia.* Octavo, 28 illustrations and 3 colored plates. Philadelphia and New York: Lea Brothers & Co. Pp., 490. Price per set of four volumes, $10.

The first volume of this new work is divided into six sections devoted to pediatrics; surgery of the head, neck, and chest; pathology; infectious diseases; laryngology; and otology. Its interest to the pediatric practitioner lies in the admirable section on diseases of children by Dr. A. D. Blackader. The first chapter is upon diseases of the new-born, and the second upon infant

feeding. The latter is an excellent review of all that has been written upon the subject within the past two or three years. The following chapters are devoted to the diseases of the alimentary canal, of the upper air passages, of the respiratory system, of the circulatory system, and of the nervous system. The section closes with chapters upon the constitutional diseases and infectious diseases. According to the plan of the work the chapter is a personal narrative, and presents not only the views of the authors cited, but the opinion of the contributor as well. The section devoted to pediatrics is an admirable piece of work and in every way a credit to its author.

Sudden Death in Infants: "Asthma Thymicum" (?).—Lange (*Centralbl. f. Gynäk.*), speaking at Leipzig of a case of sudden death where the thymus was found enlarged, raised a discussion on the whole subject. Krönig was of the opinion that rapid death of an infant should always be attributed to sepsis. It is in new-born infants that the purest examples of "bacteriæmia" are to be found, not a trace of disease being visible at the necropsy, even at the umbilical wound, when the blood is full of colonies of streptococci. Lange's patient died suddenly at three and one-half months; it had been treated for gonorrhœal ophthalmia in an out-patient department, and had been weighed every week. It was not under weight, and it died suddenly, early in the morning, without any symptoms of acute or subacute mischief in the respiratory tract. The trachea, just one inch above the bifurcation, was contracted so that its lumen, not absolutely effaced, was like the hollow in the sheath of a sword. This contraction was due to the thymus, which weighed over three-quarters of an ounce, measured one inch in thickness, and closely embraced and compressed the trachea. Structural changes were detected in the tracheal tissues. Lange claims that this case is the first recorded in which purely mechanical and persistent compression of the trachea by the thymus was sufficient to kill. He showed the parts, and with them another instructive preparation of hyperplasia of the thymus without visible compression of the trachea, from an infant who had died suddenly from after-attacks of spasm of the glottis. Zweifel had his doubts about the cause of death in Lange's first case, as the lumen of the trachea was entirely obstructed. Asthma thymicum might cause death, but there was great difference of opinion concerning that disease.—*British Medical Journal.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, March 8, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

THREE STEPS IN THE TUBERCULAR PROCESS IN CHILDREN.

DR. DAVID BOVAIRD read a paper with this title, based upon observations made in the autopsy room of the New York Foundling Asylum. Referring to the primary lesion in tubercular children, he said that in an article by Dr. Northrup, published in 1891, a series of 125 autopsies on tubercular children had been reported. In 13 of this number the tubercular lesion was confined to the bronchial lymph nodes; in 9 the tubercles were limited to these nodes and to the lungs; in 42 cases of general tuberculosis, the only cheesy masses were in the bronchial lymph nodes; in 20 cases the oldest lesion was in the respiratory tract. Of the 125 cases, in 88 the primary infection was thought to have been in the bronchial lymph nodes, in 3 in the mesenteric lymph nodes, and in 34 it was intermediate.

Dr. Bovaird said that he desired, in the present communication, to add 75 more autopsies on tubercular subjects in the same institution. In this series, 4 had exhibited a tubercular lesion of the bronchial lymph nodes alone, and in none had the tubercular lesion stood in direct relation to the cause of death. With the exception of one other case, there had been no case in which the tubercular lesion had been confined to one particular anatomical area. In no instance had tubercular lesions of the intestine or mesenteric nodes been discovered without accompanying tubercular lesions of the lungs and bronchial lymph nodes. The chief avenues of entrance for the tubercle bacillus into the system were: (1) The placenta; (2) wounds on the surface of the body; (3) the intestinal tract, and (4) the respiratory tract. None of his cases had presented evidences of the infection having gained entrance by either of the first two routes, and in no case in which tuberculosis was found in the body were the bronchial nodes free from tubercular lesions. In 60 of the cases there was evidence that the tubercle bacilli had

gained an entrance through the respiratory tract, the primary lesion being either in the lungs or bronchial lymph nodes. Of the remaining 15 cases, in 8 the lesions of the bronchial and mesenteric lymph nodes were so similar that the primary infection could not be definitely located, while in the other 7 the records were not complete.

Touching upon the early clinical manifestations of tuberculosis in children, the speaker said that in not one of the cases in which the bronchial lymph nodes had alone been affected had such lesions been suspected during life, and death had resulted from other diseases. Dulness over the upper part of the sternum was one of the physical signs laid down as indicative of involvement of the bronchial lymph nodes, but even if this sign were present, it was more often due to a persistent or enlarged thymus. Another sign of but little value was the production of a venous hum on hyperextension of the head. It was instructive to note that the diagnosis of tuberculosis of the bronchial nodes had never been made in the service of Dr. Northrup and the late Dr. O'Dwyer at the Foundling Hospital. That tuberculosis might long remain latent in the bronchial nodes, and then be lighted up and disseminated by an intercurrent disease, was exemplified by reports of several cases. When this occurred, the symptoms of the new disease usually completely masked the tuberculosis. From a careful study of his records he had been able to find only two signs of any importance as indicating at an early stage the existence of tuberculosis. These were: (1) Progressive emaciation, not explained by any other disease; and (2) continued elevation of temperature without other assignable cause. Tuberculosis would often prove to be the cause of cases of persistent marasmus occurring in children over the age of six months, and persistent fever occurring in children under two years was very significant of tuberculosis because of the comparative rarity of typhoid fever at this early age. Of course, some cases of tuberculosis ran their course without fever. Local signs must be sought for in the lungs. In 65 of his cases the lungs were involved to a greater or less extent. The early physical signs in the lungs were chiefly subcrepitant or coarse mucous râles, so that as a matter of fact there were no adequate means of making an early and positive diagnosis of tuberculosis in children. It was most often confounded with chronic broncho-pneumonia or entero-colitis.

Cavities were found in 25 of his cases, and a general miliary tuberculosis in 52 of the cases. The final stage was often reached by the dissemination of the tubercular infection. Little was known of the process by which this was accomplished. In 37 of his cases the spleen was involved, in 28 the liver, in 22 there was tubercular meningitis, but with two exceptions this meningitis was either a part of a general miliary tuberculosis or was accompanied by advanced changes in the lungs.

Combining Dr. Northrup's cases with his own, one obtained a series of 200 cases. Of this number, the bronchial lymph nodes were the source of infection in 148, the mesenteric lymph nodes in 3, and the infection was intermediate in 49.

Dr. W. P. Northrup supplemented the paper of Dr. Bovaird by stereopticon views bearing on the pathological points. Both the early and more advanced lesions of tuberculosis were shown and described, and attention was called to the resemblance between some of the slides and the processes observed in malignant tumors.

Dr. R. G. Freeman said that large numbers of bacteria must be carried into the air passages and find lodgement there, and then it was only necessary to have the mucous membrane abraded or inflamed to afford an entrance for the micro-organisms into the system. These were the factors that determined the point of invasion. The disease often started in the cervical lymph nodes, and it was not uncommon to find here the only tubercular lesions. That tuberculosis often originated from the inhalation of tubercle bacilli was a fact that had been thoroughly established, but it was not so clear that this disease sometimes originated from the ingestion of tuberculous food. He did not think any one in New York City had seen at autopsy cases in which the infection had evidently been from the intestinal tract, and Dr. Prudden in his observations of hundreds of cases of intratracheal injections in rabbits did not recall a single instance in which the intestinal mucous membrane had been involved. If tubercle bacilli gain access to the body by the intestine, they are readily carried by the lymph stream successively to the thoracic duct, superior vena cava, right side of the heart and into the lungs. Infection of the thoracic duct and veins was not often reported because attention was not directed to these parts in the examination. It had been proved that living tubercle bacilli could pass through the gastric juice of guinea-pigs uninjured, and the fact that

lesions of undoubted intestinal origin were found in the human subject served to confirm the belief that they could pass uninjured through the human stomach. Unless there was a rapidly fatal termination, there might possibly exist lesions in the intestinal tract, in the mesenteric lymph nodes, the thoracic duct, the veins, the liver and the spleen. In a series of 416 autopsies on children, Frobelius found the intestine involved in about 27 per cent., the spleen in 86 per cent., and the liver in 88 per cent. In cases of intestinal origin, the lungs and bronchial lymph nodes might, at an early stage, show very marked lesions, but as soon as the lung became extensively affected, a reinfection of the intestine might take place from the swallowed sputum. Chemical evidence that intestinal tuberculous infection was at all common was certainly rather meagre. Dr. Sims Woodhead had reported a case in which an institution was receiving milk from a dairy in which were three cows with tuberculous disease of the udder. In that institution the mortality from tuberculosis during the last year had been 30 per cent., and in the preceding year 40 per cent. of the total mortality. Reference was also made to a boarding school in which five out of the fourteen girls contracted tuberculosis from drinking the milk of a tuberculous cow. Dr. Freeman said that while he believed inhalation tuberculosis to be much the more common form, our knowledge of the channels by which the bacilli are disseminated would make it seem probable that tuberculosis of intestinal origin was not so very rare.

Dr. Curran said that his experience in the autopsy room corresponded with that already given by the reader of the paper. In only 10 per cent. of his cases had there been cavity formation. Enlarged lymph nodes should not be considered to be tubercular until proved so by microscopical examination. He had met with at least three or four undoubted cases of healed tuberculosis. In two of these the children had presented a very healthy appearance, but after their death from diphtheria, the evidences of a previous tubercular process had been discovered.

Acute Bright's Disease in an Infant.—Dr. T. B. Greenley (*American Practitioner and News*), reports a case of acute Bright's disease in an infant three months old. Neither a dermatosis nor an infection was present. There was no autopsy, however.—*Medicine.*

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, February 17, 1899.

A. B. JUDSON, M.D., CHAIRMAN.

HYPERTROPHY OF THE TIBIA.

DR. SAMUEL KETCH presented a girl four years of age whose right tibia was greatly lengthened and thickened with decided anterior bowing. He had first seen the patient in December, 1898. The epiphyses were thickened, but the enlargement was not confined to them. It was most marked at the middle of the shaft but included the whole bone, as was seen by the X-rays. Length: right leg, 19½; left leg, 18⅝; right tibia, 9¼; left tibia, 8¾. Circumference: right thigh, 9½; left thigh, 10¼; right calf, 8⅝; left calf, 7⅞. The disease had begun eighteen months ago with a small lump on the leg and pain at night and when she walked. This was Dr. Ketch's second patient of the kind. The first one was a girl eleven years of age who had been presented to the Section in November, 1897, had been operated on for the purpose of shortening and straightening the bone, and had again been before the Section in March, 1898, with resulting improvement and ability to walk about.

The bone had been found to be solid, the cavity being obliterated. Neither of the patients had received any benefit from anti-syphilitic treatment. There was doubt as to the cause of this growth of the bone. It was not improbable that the trouble began in the periosteum. It was a question whether something ought not to be done early in the way of an operation to arrest the process, such as an incision through the periosteum which might at least relieve the tension.

DR. T. H. MYERS said that this affection was extremely rare. He did not think that any drug could produce a material improvement, though it might prevent further progress of the disease. Such cases were sometimes assumed to be syphilitic for lack of better information, though no history or symptoms of that infection could be elicited.

DR. V. P. GIBNEY suggested a linear incision through the periosteum, and if that could be done with perfect safety, going

further by denuding the bone from the anterior surface and shaving off the redundant portion, suturing the periosteum and letting it heal primarily. The growth in length could not be stopped except by attacking the epiphysis, which would be hazardous.

Dr. H. Gibney said that in addition to the treatment which had been suggested, he would go further and complete the operation, straightening the leg by the removal of a wedge-shaped piece of the bone and maintaining the correct position by plaster of Paris dressings.

Dr. Myers thought that incision would only relieve the pain. He would not operate until the child had attained its growth or the disease had stopped.

Dr. G. R. Elliott said that it was of pathological interest that the tibia alone was affected while the fibula remained normal. There was but little deformity compared with the decided bowing, which had been an indication for operation in Dr. Ketch's former patient, in whom the pathological findings were diffusely distributed throughout the entire thickness of the bone. He asked what effect tying the nutrient artery of the bone would have on the progressive atrophy.

Dr. Ketch said it would probably stop the growth of the bone.

Dr. Elliott suggested the possibility of resulting necrosis.

Dr. A. B. Judson said that if the whole limb were affected symmetry might possibly be promoted during the growing period by checking the vascular supply of the larger limb, by bandaging or lacing the whole limb, and increasing the vascular supply of the smaller limb by venous compression. At the same time the functional activity of the one could be lessened and that of the other increased by the use of an ischiatic crutch or other apparatus having the same effect, with a high sole under the shorter limb. But as the diagnosis was absent and the pathology unsettled he could not suggest a reasonable treatment.

Dr. Ketch said that at an earlier stage some of the operative procedures suggested might have arrested or prevented the abnormal growth of the bone, but, on the other hand, they might have promoted it. He was opposed to the removal of a portion of the bone during the growing period. As the parents

of the child desired active treatment an incision might be recommended as likely to stop the pain which he thought was due to tension.

ENLARGEMENT OF EPIPHYSES.

DR. T. H. MYERS presented a girl sixteen months of age whom he had seen for the first time on January 10, 1899. The epiphyses of the radii, femora, tibæ and the entire phalanges of several fingers were enlarged. The joints of the ankles, knees, fingers, wrists and the right elbow were swollen and somewhat restricted in their motions. The enlargement at the ankle joint was peculiar, several of the tarsal bones sharing in it. She walked with difficulty with knees and hips flexed. Flexion of the knees and unwillingness to walk had been observed immediately after an attack of cholera morbus in October, 1898. The knees were kept a little flexed and there was a very slight effusion in these joints. The child did not sleep well, but otherwise seemed to be in good health. Potassium iodide, gr. iv. to viii., had been given t. i. d. for a month without improvement. The teeth were not notched. There was no syphilitic history. It was not typical scurvy. The child had been for three months on a general diet including eggs, meat, potatoes and fruit. It was certainly not a typical case of rickets. She had cut teeth early and walked at ten months, the head was well formed and the abdomen not prominent. The diagnosis remained uncertain.

DR. KETCH said that the obvious feature of the case was a very exaggerated change in nutrition—an over-growth of some kind, the effect of some not so obvious diathetic cause. He had seen localized changes in scorbutus which were very similar.

DR. V. P. GIBNEY said that the changes were similar to those seen in chronic rheumatoid arthritis which he had repeatedly seen in typical forms in children seven and eight years of age, and he did not see why it should not attack a child sixteen months old. This, however, would not explain the growth of the long bones and phalanges. His first thought was of scorbutus, but the condition would have disappeared with the child on the diet stated. Syphilis could be excluded. If pushed for an opinion he would say it was a case of multiple bone tuberculosis, a condition which could be less easily excluded than any of the others mentioned. The boggy feeling of the joints,

the fact that there was effusion in the joints and the statement that flexion of the knees and an unwillingness to walk had followed an attack of cholera infantum all supported the view that it was an instance of bone tuberculosis. He would raise the question whether synovitis was not one of the earliest signs of tuberculosis in a child. He advised putting the child in a wire cuirass and keeping the limbs extended. It was not good to allow the child to walk.

Dr. Ketch said that primary synovial tuberculosis was rare in children.

Dr. Judson had noticed the contraction of the knees and hips, but thought it was not the result of the reflex muscular action of joint disease, and that the fact that the contractions were nearly symmetrical, pointed to a more general cause than tuberculosis of the joints affected. He did not think that synovitis was an early incident of osteitis, and that primary synovitis could be differentiated by the absence of the usual signs of osteitis, which were muscular atrophy and reflex action, and a prolonged history of inconstant lameness and pain. Synovitis should not be considered as liable to run into osteitis, although practically it was well to relieve a synovitic joint from weight bearing.

Dr. Ketch said that he had rarely seen synovitis as an early sign of tuberculosis.

Dr. V. P. Gibney said that the focus of diseased bone might suffer a traumatism and thus cause an extension of the process and give rise to this outward manifestation. He recalled a case seen twenty years ago. The child's knee was full of fluid. It was thought surely to be synovitis, and a glowing prognosis of recovery in a few weeks was made, but after six or seven years' treatment, recovery took place with a stiff knee. Primary osteitis with secondary synovial distension occurred before the gross signs of the osteitis, which called the attention of the practitioner to some trouble in the knee. At this stage the trouble could be cured.

Dr. Elliott said that fluid in a joint immediately after a traumatism pointed clearly to a synovitis directly due to traumatism. If tuberculosis followed it resulted from a further injury to the bone itself, which made a proper nidus for the tubercular growth. In other words, a dual injury and the fluid

in the joint was entirely distinct from the true tubercular lesion, and in no way connected with it. The later tubercular development might delay the absorption of the primary synovial excess and thus the latter might come to complicate the tubercular joint.

Dr. Myers had seen effusion early in tubercular joint disease, but did not consider it of diagnostic value. In spite of the fact that the patient had had apparently an anti-scorbutic and anti-rachitic diet he could not help thinking that the trouble was due to one of these diseases rather than to tuberculosis. The child was not very sick. The principal changes were in the epiphyses and phalanges, and seemed to him to be due to some form of nutritional disease. The congested epiphyses could fully account for the pain and tenderness, but he would adopt the suggestion made and protect the joints by keeping the child quiet.

CASES OF COXA VARA.

Dr. T. H. Myers also presented a boy eight years of age who had waddled, and was walking worse every year, since he began to walk. His muscles were strong. A certain rigidity of all the muscles of the lower extremities made examination somewhat difficult. The motions of the hip joints, especially flexion and abduction, were somewhat limited. There was no dislocation, but the neck of the femur was seen in the skiagram to be bent down as in coxa vara. The diet had been very good. The boy was a little bow-legged and flat-footed.

Dr. H. Gibney found no shortening and trochanters but slightly above the line. He thought the waddling might be due to flat feet.

Dr. V. P. Gibney said that the radiograph showed forward rotation and a little bending backwards of the femoral neck at its junction with the shaft.

The opinion was expressed by several speakers that the boy had coxa vara in a mild and not strictly typical form.

Dr. Elliott thought that the condition dated from early rachitis in all probability. The picture was a logical one and the femoral neck had changed simultaneously with the bowing of the legs, both having been more or less plastic.

Dr. Ketch said that the traces of rachitis were obvious. Coxa vara was sometimes made to include cases that were not dependent on bending of the bone. Some cases were due to deviations caused by abnormal epiphyseal growth resulting in a change in the angle of the neck of the femur. On the other hand the peculiar gait of coxa vara was not infrequently attributed to knock-knees or bow-legs.

Dr. Judson said that coxa vara might be considered to mean an abnormal, or varus relation of the neck of the shaft caused by lesions of different kinds, all of which were not yet recognized.

Dr. V. P. Gibney said that in coxa vara we had found one new disease or condition to rule out in our study of hip disease. Many cases of "hip disease" in adolescents which recover and have relapses, but never get very bad, having from ½ to ¾ inch shortening, were really cases of coxa vara.

Dr. Ketch presented a boy aged eleven years, who had had a limp (left leg), in winter but not in summer, for three years. Pain and inability to walk on rising disappeared entirely in the afternoon. There had been no history of rickets or rheumatism. Abduction was limited, especially in flexion. Outward rotation abnormally free, trochanter ½ inch above the line, no atrophy. Right 28, left 27⅝. The skiagraph showed a change in the angle of the neck.

TREATMENT OF COXA VARA.

Dr. A. B. Judson suggested mechanical means for permitting locomotion while the affected part is relieved from the weight of the body as long as the bone was in a growing or plastic state.

Dr. V. P. Gibney said that when the affection was single good results could be obtained from the use of the hip-splint. He saw no objection to the wearing of a jointed splint for some months, affording not absolute but modified protection, enough to shut out traumatism.

Dr. H. Gibney said that the ischiatic crutch for this purpose was easily adjusted and comfortably worn and allowed the limb to hang free.

Dr. Myers said that when both femora were affected mechanical protection was attended with difficulties, and it was

not easy to keep the adolescent patient, like the one he had presented, quiet.

Dr. Judson suggested the use of the bicycle.

Dr. Ketch in such a case would improve the general nutrition and prepare the parents for a long wait.

FRACTURE OF NECK OF FEMUR IN AN INFANT.

Dr. Myers showed a specimen of fracture of the neck of the femur in a child, eight months old. A large amount of callus was present within and without the periosteum. There was a lateral displacement of the lower fragment inward one-third the diameter of the bone. There was no change in the length of the bone. No history could be obtained except that the injury must have occurred before the fifth month.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, March 14, 1899.

Edwin E. Graham, M.D., President.

A CASE OF FRIEDREICH'S ATAXIA.

Dr. C. S. Potts in presenting this case spoke as follows: This little girl up until five years of age was as well as other children. She has one sister who is healthy. At the age of five she began to develop symptoms which have progressively increased to the condition which you see at present. I would call your attention to the following symptoms: In the first place the gait is markedly inco-ordinate; this is increased when she shuts her eyes. Marked nystagmus is seen when lateral movements of the eyes are made; there are also jerky movements of the head and jerky choreiform movements of the arms (static ataxia) and clumsiness and difficulty in picking up small objects. She also has some tendency to talipes varus in one foot; this is more marked than in the other. There are no sensory symptoms whatever. There are no changes in the eye-grounds, and her mental condition is much better than you would expect from the expression of the face. Her speech is defective, being hesitating and slurring. Our records say that she is fifteen years of age, although she looks younger. She can read and write. The

knee jerks are absent. She has a fair amount of strength in her limbs, and could walk well enough were it not for the inco-ordination. There are no eye symptoms except nystagmus.

Dr. J. P. Crozer Griffith.—I was deeply interested in this subject about ten years ago, having had occasion to see several good instances of it. There were three cases under my care in one institution, two of them being brother and sister, and since that time I have seen a number of other cases, making twelve or thirteen altogether. This patient now exhibited presents quite typical symptoms. I would call especial attention to the expression of the face, and the method of holding the head and the body. The strange, stupid expression which the child has seems to me to be one which all of the cases assume, as far as my experience goes.

I would like to ask Dr. Potts what he thinks the best explanation for the difference of symptoms of this disease and of ataxia paraplegia seen in each condition. There is a postero-lateral sclerosis. Among other differences in symptoms, the knee jerk is present in one affection and in the other it is absent. I may say there have been cases described as Friedreich's ataxia in which the knee jerk was present and which have been errors in diagnosis. Some of them may have been multiple sclerosis; others perhaps cerebellar ataxia. These appear, however, to be genuine cases of Friedreich's ataxia with presentation of the knee jerks.

I tried in the way of treatment some time ago when they were suspending everybody for everything, the suspension method in a case of Friedreich's ataxia, and continued it for several months, but without the slightest benefit.

Dr. Potts.—As to the absence of the knee jerk in Friedreich's ataxia and its presence in ataxic paraplegia, I believe that the sclerosis of the posterior columns in ataxic paraplegia is situated higher up in the cord than in Friedreich's ataxia, and as a usual thing the lumbar region escapes. In Friedreich's ataxia the situation of the sclerosis in the posterior columns is similar to that found in locomotor ataxia. I think the posterior root-zones also escape in ataxic hemiplegia while they are involved in Friedreich's ataxia. The cases formerly classified as Friedreich's ataxia where the knee jerks are present are now classified under the name hereditary cerebellar ataxia, and in those cases which

have come to autopsy the posterior columns have been found uninvolved.

A MEASURE FOR SUGAR OF MILK.

Dr. T. S. Westcott exhibited a home-made measure for sugar of milk, intended to weigh by dry measure the amount of sugar to be used in various milk mixtures.

TRAUMATIC NEURITIS.

Dr. F. Savary Pearce reported a case of traumatic neuritis with complete monoplegia of the right forearm with operation. The patient was a particularly well developed and healthy lad of robust ancestry.

On February 12, 1898, the boy's right arm was drawn into a pulley belt and he sustained a simple fracture of the radius, ulna and humerus. There was much contusion and even crushing of all the soft parts. The arm was treated carefully on splints and bony union was not delayed. The fingers and all of the right forearm muscles remained totally paralyzed, however, and sensation was absent in all cutaneous nerve distributions from the crease of the elbow down.

When first seen, May 7, 1898, the above conditions obtained. There was also great quantitative and marked qualitative reduction of response to electrical stimuli in all muscles of the forearm. The upper arm movements were normal, the shoulder-girdle muscles slightly wasted from disease. Electrical treatment and massage were vigorously applied. There was no apparent improvement at the end of the month. Operation was now resorted to, the musculo-spiral nerve being exposed, and was found to be degenerated and compressed into less than half its normal size; but there was no callus pressure found. The ulnar nerve was also exposed, but was not compressed nor softened. The wounds healed readily. The treatment described was continued faithfully during the entire summer of '98. In July sensation had returned somewhat and the fingers could just be moved. Regeneration of nerve trunks was proven by electrical examination. At the end of one year regeneration was complete and the function fast recovering.

ACUTE DILATATION OF THE HEART.

Dr. Charles W. LeFever reported a case of acute dilatation of the heart with especial reference to the use of digitalis.

The child, a boy of five, had been the subject of acute dila-

tation of the heart following prolonged, severe illness from broncho-pneumonia and measles. The family history presented nothing of importance, except some instance of hemophilia. The boy's personal history previous to the present illness was good. He was of rather fine lineaments, but well developed, and showed no clubbing of the fingers or other evidence of congenital heart affection. He had no history of tonsillitis, rheumatic pains, or scarlatina, and had suffered from none of the acute infectious diseases of childhood except varicella which was of mild degree. The present illness dated from four years of age, when the patient began to have a dry cough and frequent vomiting and pain over the upper part of the abdomen. Four months later he was taken with broncho-pneumonia, from which he was severely ill for five weeks. But little gain in weight or strength had taken place, when at the end of seven weeks from the onset of the pneumonia, he took measles from his brothers and was sick about a week from this.

Two months later the patient was first seen by Dr. LeFever. He was then extremely prostrated, in much distress and very anæmic. There was marked enlargement of the heart dulness, protrusion of the præcordia, and feeble, rapid pulse. The respirations were fifty-six per minute. There was enlargement of the superficial veins, œdema of the feet and legs, and the liver was so engorged with blood as to fill almost the entire abdominal cavity. After four months' treatment, consisting of absolute rest in bed, abundant liquid nourishment, general tonics and digitalis, increased to heroic doses, the patient was able to go for short walks and take other gentle exercise.

As shown to the Society, the boy in general appearance scarcely gave evidence of a previous illness. Systematic treatment was discontinued at the end of seven months. The gain in weight was from twenty-eight pounds to forty pounds during the seven months.

The points to which attention was called in the paper were:

(1) The heroic dosage of digitalis; the largest dose, which was continued for several weeks, being twenty-four drops three times a day. Perceptible lessening of this dose caused exacerbation of symptoms. The probable trophic influence of the drug was mentioned.

(2) The backward leakage through the mitral valves was thought to be due to stretching of that orifice.

(3) The persistent presence of vomiting was believed to be due to engorgement of the mucous membrane whose gastric given pressure was also suggested as a cause of vomiting.

Dr. A. O. J. Kelly.—I have no desire whatever tc invalidate the correctness of Dr. LeFever's diagnosis, but I would simply like to ask why he does not consider the case one of endocarditis. It appears to me there is evidence of rather considerable hypertrophy, and in addition to the systolic murmur, I detect also a diastolic murmur and a diastolic thrill; and it seems to me also that there is accentuation of the second pulmonic sound. From these signs I infer that there might have been an endocarditis, and ask if the doctor has reasons for not believing so.

Dr. Edwin E. Graham.—Rest often does more than anything for these heart cases. This child was in bed four months before there was any distinct improvement in the heart condition. We have all seen many cases which showed improvement only after being relieved of the strain and excitement of an active life. The point which Dr. LeFever made in regard to the trophic influences of digitalis, I think, was tested two years ago by Dr. Hare, who read his paper before the Association of American Physicians. Dr. Hare took four pigs from a certain litter and fed them for several months on small doses of digitalis; four pigs from the same litter were given the same diet, but the digitalis was omitted. When the animals were a few months old they were all killed, and those to which digitalis had been given systematically presented in every instance a larger heart than those that had not received the daily doses of digitalis. I think the question of digitalis alone being responsible for this child's improvement must be negatived; in the production of that improvement we must add the factor of rest.

The point raised by Dr. Kelly, I think, is a very good one, in so far as statistics show; unquestionably far more cases would show a murmur due to endocarditis than a murmur due to a stretching of the mitral orifice. The dilatation in this heart was largely in the ventricle, and while that dilatation has been largely overcome by the hypertrophy, I question very much whether the murmur that persists is due to a stretching of the mitral orifice, and I would be much more inclined to believe that it was due to a previous endocarditis. The fact that a child not infrequently presents no previous history of rheumatism or scarlet

fever counts for very little. We frequently see cases in which the influence of rheumatism has been expended upon the serous surfaces, and there are practically no manifestations found in the tissues of the joints.

Dr. LeFever.—I would just say that I based my diagnosis very largely upon the following points: In the first place, the boy had been in a wasting condition for a considerable length of time and his strength had been gradually failing. Then the œdema of the feet, the persistent coldness of the feet and hands, the sweating, the relaxed condition of the circulation in the extremities, the rapid, feeble pulse, the enlargement of the superficial veins and the engorgement of the mucous membranes and the liver—none of these would have been apt to have occurred had the heart been hypertrophied or had full hypertrophic compensation occurred as the dilatation took place. I think, therefore, that the enlarged area of the heart dulness and protrusion of the chest wall were due to dilatation, and on recovery, I believe, more or less contraction and resumption of the muscle fibres to their former condition took place. I do not believe, during my connection with the case at least, that there was any evidence of acute endocarditis, and I made as careful an investigation as I could to determine this point. Neither did I observe any evidence of a former inflammation of the valves. My last examination was made two months ago.

A CASE OF PERSISTENT OMPHALO-MESENTERIC DUCT WITH PROLAPSE.

Dr. J. G. Jopson in exhibiting this case said: The patient is a well nourished male child, aged four months, without history of any form of congenital malformation in the family. The cord dropped on the fourth day. At the end of two or three weeks it was noticed that the umbilicus was not of normal appearance and at its site appeared a small rounded tumor which has persisted and become larger. It is now the size of a cherry, slightly conical or ovoid, is covered with dark red mucous membrane, and at its apex is an opening large enough to admit a probe, which can be passed in for a distance of an inch and a half. From this opening, the mother states, a small amount of fecal material escapes. When closely watched the tumor can be seen occasionally to rotate slowly on its axis with a deliberate, almost vermicular movement. The case is evidently one of persistence of the omphalo-mesenteric duct, with partial prolapse through its umbilical opening.

The tumors which appear at the umbilicus in the infant are classified by Sauer as (1) granulations at the site of the cord, granuloma umbilici or fungus umbilici; (2) growths arising from the remains of the distal portion of the omphalo-mesenteric or vitelline duct, which are diversely considered either as true tumors of a sarcomatous nature (V. Huttenbrenner); or as merely eversions of a portion of the duct which has remained patulous, without altogether excluding the possibility of some tumor change (Ledderhose and Kolaczek); (3) protrusions due to the eversion or prolapse of a completely patulous vitelline duct, which is the explanation of the condition found in this case.

The prognosis is not serious so long as it remains a mere fecal feature, although internal strangulation of the bowel around the diverticulum may take place. If prolapse of the duct occurs, followed by prolapse of the bowel, forming a bicornate, V-shaped, or sausage-shaped protrusion from the umbilicus, intestinal obstruction and strangulation are the natural consequences.

The treatment is very unsatisfactory. If prolapse has not occurred, repeated cauterization, or paring and stitching of the edges may close the opening. If prolapse has occurred, operative measures, such as paring and stitching the edges, ligation of the mass, and the use of the galvano-cautery, are attended with much risk, as a fold of peritoneum surrounds and extends into the prolapse and will therefore be opened. Attempts at the reduction of a large prolapse are also very dangerous. The most radical but most logical treatment consists in opening the abdominal cavity, excising the diverticulum and with it the edges of the umbilical opening, closing the bowel and sewing up the abdominal wall. The mortality is unfortunately very high, twenty-four operations having given nineteen deaths. (Sauer).

Dr. L. J. Hammond.—I saw a case of this character about three years ago in a child one day old. The condition was of course much more readily outlined than this which has gone on, and the irritation has set up considerable granulation, so that the parts are not so readily distinguished. I did the usual laparotomy, and endeavored to do end-to-end anastomosis; this could not be accomplished until the bowel had been divided both above and below its attachment to the urachus, of which it seemed to form a part. The child died within the next twenty-four hours.

THE DIAGNOSIS OF CEREBRAL ABSCESS IN CHILDREN.

Dr. L. J. Hammond read a paper upon this subject.

BRIEF REPORTS OF INTERESTING CASES.

Dr. J. P. Crozer Griffith read a paper in which he reported six unusual cases. For full text see page 329.

Dr. Bertha Lewis.—I would like to ask Dr. Griffith what he believes to be the cause of thigh friction. I have had a great many of those cases, all of which have been relieved by the separation of adhesions to the clitoris. It seems to me there is very little literature on this subject of the deformities in the genitalia of the female. I find upon reference to the latest contributions on the diseases of children no mention of this condition. I had the opportunity some two years ago of seeing a case with Mr. Anderson in London. In discussing this condition, he told me that it was so generally overlooked that in two instances he had been called upon to operate; where the adhesions to the clitoris had confined the smegma until its accumulation acted as an irritant, producing abscesses which burrowed into the pelvic cavity.

Dr. E. E. Graham.—A matter of special interest, and one which lately has been most carefully studied, is the relation between typhoid fever and meningitis. A complication of the two diseases is supposed to be extremely rare. Meningitic typhoid fever is not nearly so rare. In other words, true typhoid fever complicated by meningitis not due to the typhoid bacillus is supposed to be unusual; and typhoid fever with the meningitic symptoms due to the typhoid bacillus is occasionally met with. It is a matter claiming a great deal of attention, and I think the Society should discuss it.

Dr. Griffith.—I would say in reply to Dr. Lewis' inquiry about the case of thigh friction that I could find nothing wrong with the child's genitals, and that there was nothing abnormal discovered in the urine. The child was a very happy one, fond of being entertained, and quite active. Whenever any one approached the bed on which she was sitting—and she sat on the bed most of the time—she would commence to move her arms and legs at a great rate, under the influence of the thought that she was going to be played with. I think it was this unusually

active movement of the legs, in the sitting position, which was the starting point of the thigh friction in this case.

We cannot regard thigh friction at this early age as a necessary evidence of any moral obliquity or innate unusual development of sexual passion. It may be so, of course, but there is no reason to assume it. Nevertheless, if it is allowed to persist, a habit may be developed which it will be difficult to check.

With reference to the meningitic typhoid fever, I recall that the autopsies made in the Munich series of cases showed that meningitis is an exceedingly rare complication. Meningitic symptoms are, however, very common, and I think especially so in children. I report this case as a typical example of this, although I do not now recall having seen another in which the meningitic symptoms were so marked at the very beginning.

A CASE OF STREPTOCOCCUS MILK INFECTION.

DR. GEORGE WOODWARD reported a case of this character. See page 269.

THE DEVELOPMENTAL INFLUENCES OF PLAY.

DR. JAMES H. MCKEE discussed this subject in a paper in which he first drew attention to the influence of play in the development of the lower animals, showing that the beneficial results are not confined to motor and psychomotor functions, but that the animal might be advanced through play to a higher plane of intelligence.

Spontaneous play may produce similar results in the case of the child. The muscles, the spinal centres, the basal structures, the psychomotor centres, the intellectual centres and the association centres share in a common development.

The pedagogist knows what Basedow achieved through the medium of play and how much stress Froebel laid upon the same agency. The psychologist can advance many reasons in the support of play as a developmental factor. The child's attention is engaged thereby; play affects him in an agreeable manner; and plays are probably genetic in character, etc. Following Gulick numerous plays were mentioned which characterized the different periods of infancy, childhood and adolescence. Some examples of gross parental ignorance were cited and the paper closed with a discussion of the *moral* and *sociologic* aspects of the question.

Current Literature.

MEDICINE.

Napier, Alex.: Recovery from Tubercular Meningitis. (*Glasgow Medical Journal.* 1898. Vol. l., No. 5.)

The author reports a case in which the symptoms certainly seemed to bear out the diagnosis of tubercular meningitis. He admits that the interest in this case lies not so much in the fact that the child recovered as in the question of diagnosis; the case raises the whole question of the *possibility* of recovery in *tubercular* meningitis. His own conviction is that the disease was tubercular; and if the patient had died in the period between 24th and 29th August, when the temperature was high at night, as it usually is in the *last* stage of tubercular meningitis, he should have had no hesitation in certifying the death as due to tubercular disease. Just at this point, however, the mercurial inunction began to tell, and the patient, instead of dying, started and continued a steady progress to recovery.

There are on record many cases of apparent recovery from tubercular meningitis, but in most of them there is the haunting suggestion that there may have been a mistake in diagnosis.

The signs trusted to in making the diagnosis of *tubercular* meningitis are numerous and varied, but not one of them is entirely trustworthy or pathognomonic. The whole clinical picture in a typical case is unmistakable enough, though rarely absolutely convincing. But what of the irregular or atypical cases? A carefully noted temperature chart is valuable, but not positively decisive, however certainly it may exclude such diseases as enteric fever; the pulse is not absolutely characteristic, its variations in force and frequency corresponding rather to degrees of intracranial pressure than to anything specially diagnostic of tubercle; and much the same may be said of the state of the pupil. The presence of optic neuritis is far from decisive. The occurrence (or detection) of tubercles in the choroid seems to be not so common in life as in *post-mortem* examination; for example, choroidal tubercles have been found in 39 out of 52 cases at *post-mortem* examination, but in only 1 out of 26 cases and not at all in 41 cases during life (Osler, *Prin. and Pract. of Medicine*).

It seems to the author that but one really trustworthy test for the presence of tubercle in meningeal cases remains, and that is the recognition of the tubercle bacillus in cerebro-spinal fluid obtained from the subarachnoid space in brain or spinal cord. In the present case the attempt to get fluid from the spinal canal proved abortive. He has tried in four other cases to tap the subarachnoid space, failing in two cases but succeeding in other two. Of the latter, one proved to be non-tubercular, while in the other the fluid obtained was practically a pure culture of the tubercle bacillus. The last mentioned case was fatal, and *post-mortem* examination confirmed the diagnosis.

In doubtful cases of meningitis the subarachnoid space should be tapped, the author believes, for diagnostic purposes, and the fluid so obtained examined for the tubercle bacillus. The tapping operation is, as a rule, simple, easy and perfectly harmless.

Finlayson, James: Recovery from Tubercular Meningitis. (*Glasgow Medical Journal.* 1898. Vol. l. No. 5.)

In discussion, the case reported by Dr. Napier, Dr. Finlayson said that if one were to judge by the temperature chart alone in this case one would think of enteric fever, with an interval of ten days between the first and second attacks. One knows how difficult it is to distinguish between some cases of meningitis and typhoid. He had seen cases of typhoid fever with marked retraction of the head and extreme unconsciousness, and where the further history alone confirmed the diagnosis. He would not venture, however, to say so of this case if judged on its whole merits. Cerebro-spinal meningitis simulates tubercular meningitis very closely. He remembered the case of a child in the Sick Children's Hospital who was supposed to be dying of tubercular meningitis, but who ultimately got well. In reviewing the history and course of the illness, they came to the conclusion that the case was one of cerebro-spinal meningitis. That some cases of tubercular meningitis got well Dr. Finlayson believed, though the difficulty always remained as to the correctness of the diagnosis. The weak points in the diagnosis of this case were the occurrence of fever in paroxysms which did not occur in meningitis; there was fever at first, which subsided as the graver symptoms came on; a continued high temperature suggested typhoid. Then the pulse in this case had always

remained high; it had not come down in a way to suggest meningitis. The absence of vomiting also counted for something. He was much interested recently in the case of a boy who had symptoms very suggestive of tubercular meningitis—severe headache, vomiting, drowsiness, slow pulse (40 per minute), but who had bile in the urine and markedly bile-stained conjunctivæ. The symptoms were all due to jaundice; he had never seen such grave symptoms from such a cause in a child before. He would be very pleased if Dr. Napier's case were a case of recovery from tubercular meningitis.

Love, J. Kerr: Recovery from Tubercular Meningitis. (*Glasgow Medical Journal.* 1898. Vol. I., No. 5.)

In discussing this subject, Dr. Love said that the case reported brought into prominence the question whether recovery from tubercular meningitis were possible. Out of 100 cases of acquired deafness, some of which have been due to meningitis, the possibility of a tubercular element in some of the cases arises. Some bear undoubted tubercular evidence and some come of a tubercular stock. The occurrence of cerebro-spinal meningitis was very rare in Scotland, and when it did occur one expected to find it in groups. Dr. Finlayson suggested the possibility of typhoid in this case, and he (Dr. Love) had seen nerve symptoms such as were present in this case in enteric; but the temperature chart for the first week negatived such an explanation.

Steven, J. Lindsay: Recovery from Tubercular Meningitis. (*Glasgow Medical Journal.* 1898. Vol. I., No. 5.)

Dr. Steven also expressed his interest in this case and discussion. He was inclined to think that the case was not one of tubercular meningitis. He admitted that there might have been meningitis, and severe, but not tubercular. One case he could recall in private practice, which recovered, but this very fact made him doubt the accuracy of the diagnosis. His experience of tubercular meningitis *post-mortem* was that it was seldom local, but a local manifestation of a general disease, and frequently associated with miliary tuberculosis. Hence the difficulty of diagnosis.

Comby: Case of Congenital Myxœdema. (*Archives de Médicine des Enfants.* Vol. i., No. 9.)

The patient was a sixteen months' old girl whose father

was alcoholic. She could neither walk nor talk, was only as large as a newly-born infant, and had a yellow color, dry, coarse hair, macroglossia, large abdomen with an umbilical hernia, and a large, widely-open anterior fontanelle. The thyroid gland could not be felt. There was constipation and a constantly sub-normal temperature. In spite of the administration of thyroidine, the child's condition grew worse, the weight diminishing. Spasm of the glottis developed, the suffocation becoming so severe as to require tracheotomy, and this was followed by death in a few hours. At the autopsy no trace could be found of either thyroid or thymus gland; both were completely absent, and their place was taken by connective tissue. No lesions were found in any of the viscera.

The symptoms of myxœdema do not usually develop so early in life, even in congenital cases, and the author is inclined to attribute the precocity as well as the severity of this case to the absence of the thymus gland simultaneously with the thyroid.

Moizard and Bernheim: Addison's Disease; Acute Tuberculosis Terminating. (*Archives de Méd. des Enfants.* Vol. i., No. 9.)

A girl of fourteen years suffered from extreme asthenia, diarrhœa, fever, and pigmentation of the skin. The diagnosis of Addison's disease was made, and strengthened by the appearance of pigment in the conjunctivæ. Death resulted from an attack of membranous angina due to staphylococci. There had been dulness and fine râles. At the autopsy tubercles were found in both lungs, bronchial lymph nodes, larynx, peritoneum, liver, spleen, kidneys, and supra-renal capsules. These last were of normal size, but studded throughout with tubercles, one in the left being as large as a pea. Microscopical examination and the finding of tubercle bacilli, proved the process to be a tuberculous one. The supra-renals contained an excessive amount of pigment, some of which was also present in the liver, spleen, kidneys and lungs.

The case was evidently one of a poorly nourished child who contracted a tuberculosis first localized in the bronchial glands or in the supra-renal capsules, and becoming later a general tuberculosis in the course of which the symptoms of Addison's disease developed and gave the illness its distinctive features.

Morin: Tuberculous Cystitis in Children. (*Rev. Internat. de Méd. et de Chirurgie.* Vol. ix., No. 10.)

Although a rare affection, tuberculous cystitis may be secondary or primary in the child. Its symptoms differ from those in adult cases in that the pain is much less severe, often absent altogether, and hematuria is rare; while pyuria and incontinence are the two principal symptoms. The testicles and the prostate gland are not affected in children. The disease has a marked tendency to spontaneous cure. Should general tonic treatment not bring about a speedy improvement, a supra-pubic incision should be made in order to treat the mucous membrane with curettage or local applications.

A Visit to Craig Colony. (*Philadelphia Medical Journal.* 1898. Vol. xi., No. 20.)

Contrasting the pitiful fate of the average epileptic, the author was deeply moved by the contrast. Here were 322 people living in what was a close approximation to home and family life, surrounded by those who by the same affliction were bound to be sympathetic, and governed by those whose duty and pleasure it is to cure if possible and at least to help.

But the greatest blessing of all was the out-of-door, healthful labor which was offered and urged, and which, as a rule, was gladly accepted by all. What more naturally-curative method could be devised than that of draining to the muscles, if one may so speak, and to the digestive system, the overplus of the hypersensitive nervous mechanism, which otherwise floods with injury the lowlands upon which it is abnormally deluged. Everybody was busy, and everybody seemed to be happy in the activity of fruit-gathering, gardening, and the hundred other labors going on. An occasional fit caused no malign excitement or curiosity and the patient always found present those ready to prevent injuries during the seizure or to give help after it was over.

The greatest need of the colony is the buildings to care for a greater number of patients. In this way the per capita cost of maintenance will be greatly reduced. To the community the total expense of epilepsy will be thus lessened, because at present the care direct, and indirect, of those outside the colony is more expensive than it would be in it; and this leaves out of consideration the fact that outside there is practically no thera-

peutics, actual or attempted, while within cure is not only possible, but relief at least sure. The evil will not be an ingravescent, but a lessening one. The superintendent says that the appeals of the 600 applicants for admission are most pathetic and insistent. Besides feeding, clothing, and providing medical attendance and nursing for the patients, the management aim to—

1. Educate them intellectually and in the acquisition of useful trades.

2. Study them scientifically, that like sufferers may be benefited.

3. Provide for them simple and recreative forms of amusements.

4. Improve, develop, and cultivate a vast farm of nearly 2,000 acres.

It is this last feature that causes the colony to differ so radically from other charities. Most of them have simply a building full of patients, with perhaps a small farm or garden attached; but none of them are forced to make a dollar do as much as at the colony. On the other hand, the cultivation of the soil pays, and what was grown on it and produced in the various departments of the colony amounted this year to the very gratifying sum of $36,889.03, and of which there was on hand on the first day of October, available for use during the coming year, $19,603.62 worth. This is surely a good economic showing.

The author was particularly interested in the fact of the employment of patients. During the month of his visit 86 per cent. of the men of the colony were employed, at an average value per patient of $46.90. The figures for women were somewhat less. As far as the physical condition of the patient will admit of it, all are required to engage in some form of occupation. The advantages of occupation to the epileptic are beneficial and remedial. Wholesome outdoor exercise, the kind that quickens the circulation, brightens the eye, sharpens the appetite, and rehabilitates a flagging digestion, has been found, not only in this country, but in England, and wherever epileptics have been segregated for rational treatment, to have for them a marked and peculiar value. This fact is now recognized by the National Society for the Employment of Epileptics in England.

The work under the charge of the matron—a woman of exceptional ability and devotion to her work—was highly inter-

esting. There are daily classes for children in plain sewing, etc., in domestic science, table-waiting, bed-making, etc., etc. Basket-making was an interesting novelty. Physical-culture exercises, marching, dancing, etc., were also not forgotten. The list of articles made in one year by the girls and women (mattresses, sheets, nightshirts, towels, etc.) footed up about 10,000. The school-attendance averaged 25. Manual training among the boys and men was in full swing, one class of 20 being chiefly engaged in Sloyd work under an instructor from the Boston training-school.

A training-school for nurses is carried on.

As to the seizures, the superintendent, Dr. Spratling, courteously allows the following data to be taken from his forthcoming report:

SHOWING 39,304 SEIZURES CLASSIFIED BY HOURS.

1 A.M.,	1187	1 P.M.,	1490
2 A.M.,	1397	2 P.M.,	1309
3 A.M.,	1468	3 P.M.,	1197
4 A.M.,	1801	4 P.M.,	1117
5 A.M.,	1461	5 P.M.,	1016
6 A.M.,	1041	6 P.M.,	920
7 A.M.,	1249	7 P.M.,	820
8 A.M.,	1139	8 P.M.,	995
9 A.M.,	1128	9 P.M.,	1822
10 A.M.,	1133	10 P.M.,	1507
11 A.M.,	1311	11 P.M.,	1232
12 M.,	1519	12 N.,	1279

It will be noted from the foregoing table, that 7 o'clock in the evening was the hour at which the smallest number of seizures occurred, while the greatest number occurred at 9 o'clock in the evening. From the 1896 report, a study of 5,377 seizures showed that the hour of greatest frequency was 2 o'clock in the afternoon, while the minimum number occurred at 7 o'clock in the evening.

Inasmuch as the observations of the two years do not coincide, it is proposed another year to extend the same so as to include a study, by the hour, of 300,000 seizures.

As to the frequency of seizures, about 90 per cent. of 275 cases had fits on an average of one, or more, every seven days. Only 27 had attacks less than a week apart.

As to treatment, more than usual attention was paid to the matter of diet during the past year. Gluten bread, selected on account of its freedom from starch, was used to a considerable

extent and, on the whole, with very satisfactory results. It was found to have especial value in cases subject to gastro-intestinal disorders, and its action in such cases was uniformly good. The same care was demanded of the cooks in the preparation of food in the kitchens that the apothecary exercises in the pharmacy in the compounding of medicines. All new remedies were given a trial, and the old ones tried in new combinations. The superintendent thinks that he has not yet met with that degree of success in the drug-treatment of the disease that leads him to think that proper diet and systematic exercise are inferior to diet as therapeutic measures.

The conservative physician will approach the question of the curability of epilepsy with full caution, and it is very proper that he should, for among the long list of intractable disorders epilepsy easily holds first place. And yet seven patients were discharged during the year, no seizure having taken place for two years.

HYGIENE AND THERAPEUTICS.

Cotton, A C.: The Treatment of Rheumatism in Children. (*The Medical Standard.* 1898. No. 10. *The Medical Age.* 1898. Vol. xvi., No. 23.)

The author says that the treatment of rheumatism, particularly in children, really resolves itself into the question of the treatment of endocarditis. This he believes to be especially true for the want of demonstration that any treatment of acute inflammatory rheumatism, except the prophylactic, will prevent the subsequent lesions of the endocardium. By many pathologists the endocarditis is regarded as the result of traumatic injury from the impact of the valves occurring abnormally on account of the change of contour due to inflammatory thickening of the subserous fibrous structures. Since this thickening may not be evidenced by any physical signs until the valvulitis has so far progressed that it is shown by a murmur, it follows that no treatment for rheumatism, except the prophylactic, may antedate the process which causes the permanent lesion.

Does any one question the necessity for reducing the activity of the diseased heart to the minimum of physiologic requirements?

The means of accomplishing this, within certain limits, every physician has at hand; so, too, every practitioner has his

favorite agents. Rest in recumbent position, freedom from disturbing influences, free action of the emunctories, maintenance of nutrition by a simple diet which will least tax the digestive apparatus—in other words, maintaining the activity of the system with the greatest possible economy of heart action. Any remedial agents that will assist in accomplishing this end and are not contraindicated should be exhibited. The employment of antipyretics, cerebral or vascular sedatives, analgesics, stimulants, eliminatives (as laxatives, diuretics, diaphoretics), general or local applications, hot or cold, must depend upon the special needs of the case. So, too, with remedies directed to the heart itself. An arrhythmic and failing pulse may require strychnine, alcohol, digitalis, etc.; and pain, opium.

Crandall, Floyd M.: The Treatment of Pertussis. (*International Clinics.* 1898. Vol. iii., Eighth Series.)

Ideal treatment should accomplish four results,—namely, reduction of the number of paroxysms, mitigation of their severity, prevention of complications, and shortening of the duration of the disease. We have no specific for pertussis, hence no strictly ideal treatment; but we may accomplish something, the author believes, in each of these directions except, perhaps, to reduce the duration of the disease. The practitioner, when he adopts a new plan of treatment, usually expects too much. No treatment will *cure* pertussis, but the disease may be modified in severity in every case and materially relieved in many. In estimating the value of treatment we must not forget that the disease is extremely variable in the course which it pursues, so that single cases will demonstrate but little. Successful treatment must utilize every available means of relief. These means may be classified as hygienic, local and constitutional.

HYGIENIC TREATMENT.—The hygienic treatment is very important; the younger the patient the more important does it become. Infants frequently succumb from simple exhaustion or heart-strain. The feeding of such children should be regulated with particular care, and stimulants should be given at the first appearance of failing strength. Infants should not be left alone during the paroxysms, but they should be taken up and aided as far as possible.

Fresh air is the most important item in treatment. Children

suffering from pertussis do particularly well at the sea-shore. Under all circumstances they should be kept in the open air as much as possible, but judgment should be exercised in sending them out in cold and damp weather. The child should be entirely removed from its sleeping-room during the day. The room should be kept widely open to the air, being closed only in time to warm it properly at night. During the night the day room should be similarly aired. Frequent changes of clothing and bedding should be made, for these patients unquestionably reinfect themselves and add to the severity of their disease.

The feeding at all ages should receive attention, for attacks of indigestion are always accompanied by increase in the severity and the number of the paroxysms. In cases in which vomiting occurs, the question of feeding is often one of great difficulty. Small amounts of food given at short intervals are frequently retained when larger amounts are rejected.

LOCAL TREATMENT.—The various methods of local treatment proposed from time to time, in the author's experience, have proved unsatisfactory. The use of medicated sprays, the insufflation of powders, and the local application of cocaine and other drugs have proved either ineffectual or dangerous. Considerable relief may result from the use of the croup kettle. The addition of creosote to the steam, as in the treatment of pneumonia, sometimes proves very efficacious. It is particularly indicated when pulmonary complications are threatened. The application to the chest of mustard pastes or stimulating liniments is of unquestionable benefit. Such counter-irritation is the basis of one form of popular treatment, which undoubtedly affords relief in many instances.

CONSTITUTIONAL TREATMENT.—The host of remedies recommended for pertussis indicate that many drugs give slight relief, while none are of striking value. In the most recent work on therapeutics fifty-six drugs are mentioned as useful in this disease, while in another sixty-three are mentioned. Out of this great number, the author speaks of very few. Antipyrin, all things considered, is the most effective drug he has used. He long ago ceased to use it as an antipyretic, as being dangerous for that purpose, but has prescribed hundreds of doses for children during the past six or seven years, and has as yet to see unpleasant results from its use. It does not cause depression, as it sometimes does in adults, and very rarely any

rash. In the majority of cases, it notably mitigates the severity of the paroxysms and markedly reduces their number, usually as much as one-half, but it rarely causes them to entirely disappear. In doing this it largely reduces the danger of complications. It is not certain that it materially reduces the duration of the disease, though it apparently does accomplish that result in some cases. It checks vomiting very frequently.

To form an adequate opinion regarding the effect of the treatment in whooping-cough, it is necessary to keep a record of the paroxysms. The author does not wish to overestimate the remedy, and is free to admit that it sometimes fails to accomplish material results. It so commonly, however, acts promptly and well, that in beginning the treatment of a new case he always gives antipyrin first. It is best administered in solution in water, to which a little syrup of tolu is added, which well covers its bitter taste. The initial dose for a child one year old is one and a half grains every four hours; for a child of four years, two grains every three hours. The interval between the doses may be rapidly reduced to two hours. Dr. Kerley, who has a large experience, speaks very positively of the advantages of a combination of antipyrin and bromide of sodium.

Quinine is the favorite remedy of many practitioners, and is unquestionably effective. It must, however, be given in large doses, not less than ten grains being required daily for a child of four years. It frequently causes vomiting, and many parents object to giving it in such quantities.

Belladonna has long enjoyed high repute in pertussis, a repute that seems to have been overestimated. It must be given in large doses to be effective, and is a dangerous drug in careless hands. Many fatal accidents result yearly from its use. Its physiological effects, if long continued, are extremely unpleasant.

Alum is of undoubted benefit in cases marked by profuse secretion. It is far cheaper than antipyrin, is easily administered, and is well tolerated. It may be given in solution with a little syrup of lemon in doses of two grains every three to four hours at two years. When expense is an element of importance, alum may be alternated with antipyrin.

Children sometimes continue to cough and vomit after the disease should naturally begin to subside. In such cases the author has sometimes found oxalate of cerium of value when

other remedies have failed. He has not, however, obtained material results from its use during the first three weeks of the disease.

Opium has undoubted power to control the paroxysms of pertussis, but it is not a proper drug for long-continued use. Occasional doses, however, are quite proper to secure rest when sleep is broken at night. Codia is one of the best forms for such use. A child of two years may receive one-tenth of a grain, to be repeated if necessary. The bromides are also of value, and may be profitably employed in connection with antipyrin, as already suggested. Two grains may be given every three hours at one year, and three grains at three years. Trional may be employed to secure sleep, and chloral may also be used for the same purpose.

Comby: Treatment of Eczema in Children. (*Gas. Hebdon. de Med. et de Chirurg.* 1898. *Scottish Medical and Surgical Journal.* 1898. Vol. iii., No. 5.)

The proper nourishment of the infant is of the greatest importance. If fed on the breast, the number of times the child is suckled as well as their duration and their intervals should be strictly regulated as well as the diet of the nurse. If fed artificially, the precautions must be still more severe, *e.g.*, careful sterilization of the milk and its proper dilution. In certain cases asses' milk or Gærtner's decaseinated milk may be employed.

If the child be older and eating ordinary food a regulated dietary must be drawn out, *e.g.:*

BEVERAGES.—Alcohol, tea and coffee are to be proscribed and a purely milk diet substituted.

FOODS.—Fish, crustacea, pork, game, salt meat, ham, cabbage, cauliflower, salads, tomatoes, strawberries, gooseberries, spiced meats, strong or salt cheese are to be avoided, as well as salted or highly spiced or sugared foods. Ordinary flesh food merely aggravates the disease. White meats, veal, chicken, etc., may be at first tried.

OPEN AIR EXERCISE.—The children should be taken out every day, avoiding, however, such days or times when there are extremes of temperature. A change of air to the country is often beneficial.

MEDICINAL TREATMENT.—In infants of tender age the moderate use of alkalis and laxatives is indicated as well as the exhibition

of intestinal antiseptics. If the stools are very fœtid minute doses of calomel are frequently of use. Bicarbonate of soda, calcined magnesia and benso-naphthol, together with nux vomica, form a good mixture. This treatment is continued for a week or ten days, then intermitted for a like period. If there is diarrhœa, salicylate of bismuth may be used instead of the magnesia. If the child be very anæmic, iron may be given also.

LOCAL TREATMENT.—Baths must be prohibited after an initial bath of corrosive sublimate (1-10,000). Crusts must be removed by starch poultices. A solution of picric acid (1 per cent.) is useful. If the eczema is pruriginious, compresses of cod-liver oil are useful. To lessen irritation, glycerole of starch, vaseline or lanoline with oxide of zinc or subnitrate of bismuth may be employed. Dry treatment gives remarkable results in many cases of diffuse or severe eczema, and the following powder is used successfully by Dr. Comby: Starch, talc, lycopodium, subnitrate of bismuth, of each 20 gr.; salicylic acid, 1 gr.; menthol, ½ gr. Dermatol or aristol may be employed, but the principle is the same. The powder protects the surfaces and favors reformation of the epidermis. This is the best treatment for eczema in early infancy.

Freyberger: The Treatment of Incontinence of Urine in Children with the Liquid Extract of Rhus Aromatica. (*Therapeutic Gazette.* 1898. Vol. xxii., No. 11.)

In a recent issue of *Treatment* we find that the author has used this drug with great success. He gives a brief summary of the thirty cases of enuresis which he has treated with rhus aromatica.

In all cases spoken of as "cured" at least nine months have elapsed since enuresis had occurred for the last time.

Of the thirty patients treated with rhus aromatica, twelve are boys and eighteen girls; their ages vary from three to eleven and a half years.

At the time when treatment was begun one child suffered from anæmia, two from rickets, one from rheumatism, two from chorea, five from morbus cordis, five from large tonsils and adenoids, one from somnambulism, one from pulmonary tuberculosis, and one was microcephalic; while in eleven children no concomitant affection could be found.

One boy suffered from diurnal enuresis; five boys and fifteen girls presented the combined (or continuous) form of enuresis.

The average duration of the treatment was forty days—thirty-five days in boys and forty-five in girls.

The first signs of improvement occurred on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day.

Thirty-three days on an average were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement.

Eleven boys and seven girls were permanently cured: one boy and nine girls were permanently relieved; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months.

A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or toward the end of the first week in five cases, and during the second week in three cases. While this exacerbation lasted the patients not only wetted the beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1002 and 1007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, the author made it a rule to tell the parents beforehand that such a recrudescence might possibly occur, but that it would not last long, and in all probability would soon be followed by a decided improvement.

It would be rash to claim for rhus aromatica the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely one hundred cases on which reports have been published; but so much may be said in its favor that it appears to be as efficacious as belladonna, that it may be given for however so long without the slightest ill effect, and that good results may be obtained with it where belladonna proves ineffective.

The astringent taste and disagreeable odor of the liquid ex-

tract of rhus aromatica are sufficiently disguised by syrupus aromaticus.

The dose employed was: Five to ten minims for children two to five years old; fifteen to twenty minims for older children.

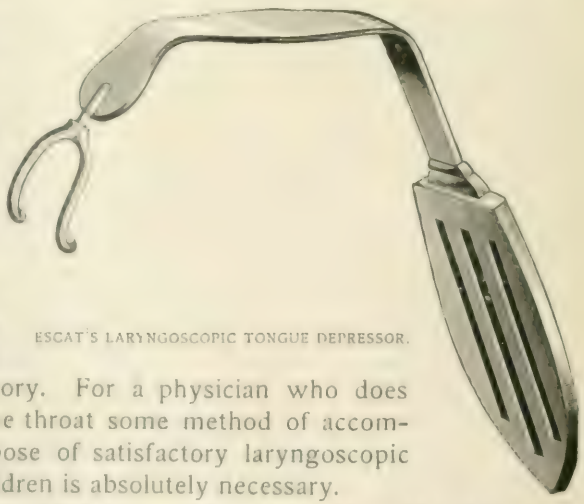
A very convenient formula is the following:

Ext. rhuis aromaticæ fl., 10 minims;
Syrup. aromatici, 20 minims;
Aq. distillatæ, ad 1 drachm.
This amount to be given three times a day.

SURGERY.

Blackader, A. D.: Forced Examination of the Larynx in Children. (*Progressive Medicine*. 1899. Vol. i.)

The importance of detailed laryngoscopic examination of young children is sometimes very great. One is apt to hesitate, however, to employ general anæsthesia, and parents will object to anæsthetics unless some operative procedure is intended at the same time. Besides, laryngoscopic examination under an anæsthetic is usually unsatisfactory. For a physician who does special work on the throat some method of accomplishing this purpose of satisfactory laryngoscopic examination of children is absolutely necessary.



ESCAT'S LARYNGOSCOPIC TONGUE DEPRESSOR.

The author describes two novel methods. The first is Escat's suggestion, and is instrumental. He has devised a peculiar form of tongue depressor, as shown by the accompanying figure. As may be seen in the illustration, the instrument is curved so as to adapt itself exactly to the base of the tongue. On the distal extremity a blunt fork is fixed, of which the two branches descend, one on either side of the epiglottis, ending in two rounded points which, when the instrument is used, are

supposed to lodge in the pyriform sinuses on each side of the laryngeal orifice. The instrument serves, therefore, not only to control the tongue, but to pull forward the rima glottidis from the posterior wall of the pharynx, and so to provide good conditions for the employment of the laryngoscopic mirror. It is probable that on the principles used by Kirstein, in what he calls autoscopy, *i.e.*, laryngeal examination without a mirror, the examiner will be enabled, with a little practice, to see a good deal of the larynx (especially its posterior part, which is the more important one) by direct vision, and without the use of the mir-

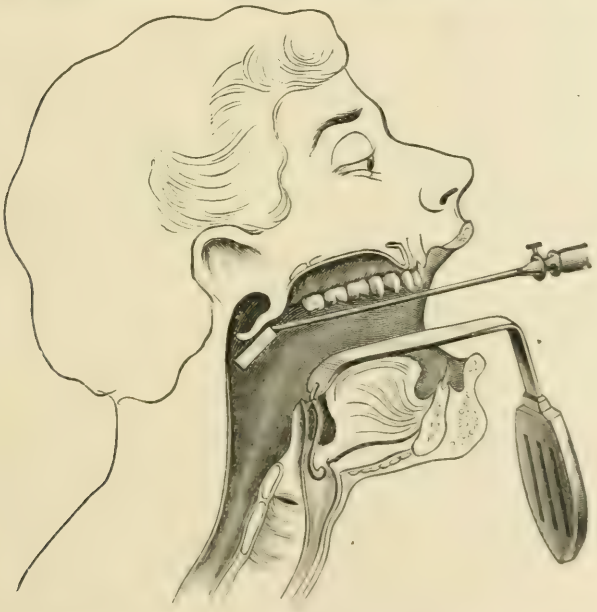


DIAGRAM SHOWING POSITION OF LARYNGOSCOPIC TONGUE DEPRESSOR DURING FORCIBLE EXAMINATION OF LARYNX IN CHILDREN.

ror. The method of the manipulations with the new instrument is well illustrated in a diagram presented. In the second diagram the position of the instrument in the throat is well shown. It will, as a rule, be necessary, even with the instrument, to have the movements of the child restrained by a sheet rolled around its arms and legs in the usual way, and to have it carefully held on the knees of an assistant, but with this the examination of the larynx can be made much more satisfactorily than with the ordinary tongue depressor.

A simple method for the examination of young children is also given, which seems extremely practical and well worth noting. It was demonstrated by Lack, at a meeting of the Laryngological Society of London, about a year ago. The advantage of this second method is that no special instruments are required and no force is employed. It is described by Dr. Blackader as follows: "The infant is placed in the usual position for laryngoscopy, the index finger of the left hand is passed well into the mouth, and the terminal phalanx hooked around the hyoid bone, which is pulled forward. The rest of the finger acts as a tongue depressor, the knuckle as a gag, while the left thumb under the chin serves to steady the head. With the use of a small mirror the larynx can now be easily seen. The method causes no pain, and requires no anæsthetic, while the younger the infant the less is the resistance and the easier the examination." These manipulations certainly commend themselves by their ease and simplicity, and it would seem that the method deserves thorough trial that its merits may be tested in practical use.

Whitman, Royal: Coxa Vara; Its Etiology and Treatment. (*New York Medical Journal.* 1899. Vol. lxix. No. 3.)

The literature of this subject is meagre. The author wrote a paper upon it four years ago and the present paper is written for the purpose of bringing the subject up to date.

Coxa vara is a depression of the neck of the femur, in most instances following the line of the least resistance, downward and backward, but occasionally directly downward, or even downward and forward. It is one of the group of deformities of the lower extremity due to inherent or acquired weakness of structure or to disproportionate strain, or both, in which knock-knee, bow-leg, and the weak foot may be included. The effect of the deformity may be explained by the change in the anatomical relation of the parts involved, and its symptoms are such as might be expected as a result of the progressive transformation of the internal structure of the weakened part, and of the sympathetic and accommodative changes in the joint and in the surrounding muscles.

Coxa vara is of particular interest and importance because it has been, until very recently, entirely overlooked, and because it has been and still is very generally mistaken for tuberculous

disease of the hip joint. Indeed it is, apparently, to such a mistake that we owe the identification of the affection.

Bow-leg and knock-knee are self-evident, but this deformity of the hip is concealed from view, and in the early stage it is somewhat difficult to diagnosticate, unless one is familiar with its characteristics.

In simple distortions of the legs, the deformity is of greater importance than the discomfort or disability that it causes; but in coxa vara the depression of the neck of the femur entails a partial displacement or disarrangement of the components of the joint that may cause disability out of proportion to the apparent deformity.

The characteristic symptoms and the effects of coxa vara are explained by the deformity, and the diagnosis can be made only by the physical examination. In the normal subject the neck of the femur projects upward, inward, and slightly forward, forming an angle with the shaft of from one hundred and twenty-five to one hundred and thirty degrees. This allows for the abduction of the thigh and for the proper leverage of the muscles attached about the greater trochanter. If, then, the neck becomes depressed to a notable degree—for example to a right angle—the range of abduction will be restricted, because the neck of the bone will come into contact with the upper border of the acetabulum. If the neck is, at the same time, forced backward, the shaft will be rotated outward and the range of inversion of the limb will be diminished. The effect of the deformity in restricting the other movements of the joint is less direct. Extension remains unaffected, or its range may be increased even; flexion is limited by the abnormal tension on the capsule, because extreme flexion would throw the displaced head out of the acetabulum. For the same reason flexion increases the adduction and outward rotation of the limb.

If, on the other hand, the neck is displaced forward, extension and eversion may be limited, while flexion and inversion are unrestricted. The deformity and the restriction of motion are caused, primarily, by the distortion of the bone and by tension on the capsule, but their effects are exaggerated by the accommodative shortening of the muscles and, in some instances, by active spasm and contraction. Thus, the actual shortening of the limb, corresponding to the elevation of the trochanter, may be but half an inch; it is not often more than an inch even in advanced deformity, yet in the latter instance the apparent shortening, due to the adduction of the limb and to the compensatory upward tilting of the pelvis, may greatly exaggerate the inequality of the limbs, and when both femoral necks are depressed the legs may be actually crossed, so that locomo-

tion is extremely difficult. Such extreme disability is caused, in great part, by spasm or secondary contraction of the adductor muscles, which lessens when the progress of the deformity is finally checked.

In fact, unilateral coxa vara, during the progressive stage, corresponds, in its symptoms and physical signs, so closely to fracture of the neck of the femur during the stage of repair that but for the history it could not, in many instances, be distinguished from it in patients of the same age, either by examination or by the X-ray photograph.

A secondary effect of the deformity is disturbance of the equilibrium, and thus a change in the contour of the body. If, for example, the necks of both femora are depressed backward, the support of the body is displaced forward, and the normal lordosis is diminished. If, on the other hand, the inclination of the neck is downward and forward, the trochanters are displaced backward and upward; thus the lordosis is increased and the range of outward rotation of the limbs is restricted.

From the nature of the deformity one may readily explain the symptoms. In unilateral coxa vara the slight limp due to the shortening of the leg, a certain stiffness about the joint after a period of inactivity, and dull pain or discomfort, usually referred to the front of the thigh, are the most prominent symptoms. These are, in most instances, supposed to be due to rheumatism, or are thought to be "growing pains," until the deformity is more advanced, when a diagnosis of hip disease is usually made. In young children there may be no complaint whatever. On the other hand, in the adolescent, there are usually sensations of weakness and awkwardness, and at times, after overexertion or long standing, severe pain about the joint may be experienced. These symptoms are accounted for by the sympathetic disturbances in the joint, as well as by the partial displacement and strain upon the ligaments, in which particular the deformity resembles more nearly the weak foot than simple bow-leg or knock-knee.

If the deformity is bilateral, the limp is replaced by a peculiar swaying of the body from side to side, due to the restriction of abduction, a gait resembling that characteristic of knock-knee, in which the legs are alternately lifted by one another. The awkwardness and weakness are more marked, and in extreme deformity, in which the legs are crossed, locomotion may be impossible.

In some instances, particularly in the bilateral form, coxa vara may be accompanied by other evidences of weakness in the lower extremity, more particularly by flat-foot, to which the eversion of the leg predisposes; but in the majority of cases there is, as a rule, little evidence of weakness, and none whatever of general rhachitis.

The important points in the physical examination are, then,

the elevated, prominent, and displaced trochanter, as may be demonstrated by Nélaton's line and Bryant's triangle, and the actual shortening of the leg and the peculiar and unequal limitation of the range of motion dependent upon the deformity. In progressive cases, forced passive motion causes discomfort, and at times it may be resisted by voluntary and involuntary contraction of the muscles. This is, however, rather unusual. There is commonly a certain amount of muscular atrophy, more marked in the thigh than in the leg, which corresponds to the duration and to the degree of the disability.

There are very few affections for which coxa vara may be mistaken. One of these is congenital dislocation of the hip, in which the limp, the elevation and prominence of the trochanter, and practicularly the abnormal lordosis and waddle of bilateral misplacement are similar to that exceptional form of coxa vara in which the necks are turned forward. But the very fact that a dislocation is congenital, that its symptoms are noted from the moment that the child begins to walk, should exclude coxa vara, which is, as a rule, a deformity of late childhood or adolescence.

The treatment of coxa vara may be preventive or operative. If the diagnosis is made in the early stage, one may hope, by removing the strain of occupation or overexertion, or, in the unilateral deformity, by the use of a perineal crutch-splint, to check its progress. Together with the support, massage, exercise, and passive forcible manipulation of the leg in the direction of limited motion should be employed. In all cases supervision will be required to prevent overstrain of the weakened part during childhood and adolescence, or until the period of growth has been completed.

Operative treatment may also be preventive; for example, one may attempt to replace the depressed neck in its normal position by the removal of a cuneiform section from the base of the trochanter. This operatian the author has performed in three instances for the relief of coxa vara. Two of them were cases of the traumatic form (fracture of the neck of the femur). The operation was successful in every case, and the first has been under observation for more than a year. It would seem to be indicated in deformity of early childhood in which the depression is likely to be slowly progressive, and finally extreme.

The other operation is intended, primarily, to relieve the effects of the deformity, of which the most disastrous is fixed adduction of the leg. In two cases of this character linear osteotomy below the trochanter minor permitted abduction and rotation of the shaft inward to its normal position with complete and permanent relief of the disability. This operation should be performed whenever the depression of the bone prevents the abduction necessary for the proper use of the limb. Even if the affection is in the progressive stage, the fixation during the stage of repair and the nutritive changes consequent upon it seem to

exert a favorable influence upon the structures within the joints.

After union of the divided parts is firm, a perineal crutch should be employed for several months, together with exercise and massage, as already mentioned.

In a total of 96 cases, including these and others reported by Hofmeister, Kocher, Leusser, Muller, Ogston, and others, 74 were in males and 22 were in females. In 23 the deformity was bilateral, in 73 it was of one side.

The 26 patients may be divided into groups, according to the age at which they applied for treatment: Adolescents (twelve to eighteen years of age), 15; later childhood (five to eleven years of age), 7; childhood (less than five years of age), 2; adults, 2.

If, however, the supposed duration of the symptoms be subtracted from the age, the classification according to the time of onset would change the groups as follows: Adolescents, 12; later childhood, 8; childhood, 5; unknown, 1.

The two adults desired examination simply for the explanation of the limp, which had been of many years' duration.

One case was brought for treatment during the course of infantile rhachitis, and in eight others there was evidence of former rhachitis in slight distortion of the extremities, or a history of weakness, apparently rhachitis, in early childhood.

In three instances the symptoms of progressive coxa vara appeared to have been continuous, although remittent, with this early weakness.

A more extended experience has convinced the author that coxa vara is much less rare than has been supposed. What has been spoken of as latent deformity as a predisposing cause of deformity of a later period applies equally well to all other static deformities of this class; and it emphasizes the importance of a more careful oversight of weakly children, for the purpose of detecting and correcting not only the distortions of the bones, but also the improper postures and restriction of motion in the joints that may cause awkwardness or lead to disability.

In addition to the 30 cases of coxa vara, 14 cases of fracture of the neck of the femur in childhood, traumatic coxa vara, have come under the author's observation within a few years. Here, then, are 44 cases of a deformity until very recently unrecognized, the larger number of which were sent to the hospital or clinic for the treatment of hip disease. If such simple disabilities are so mistaken, it may be inferred that other affections of a non-tuberculous nature not infrequently pass as hip disease also.

The first step toward a proper classification of disease of the hip joint on a clinical, pathological, and anatomical basis must be the elimination of affections which are non-tuberculous in their character, and incidentally this paper may be considered as a contribution to this object.

ARCHIVES OF PEDIATRICS.

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Original Communications.

THE RESULTS IN ADMINISTERING THE ANTITOXIN OF DIPHTHERIA AS AN IMMUNIZING AGENT.

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At various times during the past few years diphtheria has been introduced into the wards of the Children's Hospital, thereby crippling the efficiency of the work, and in some instances necessitating the closing of the hospital to the admission of new patients. While these annoyances were greatly abated by the prompt administration of the antitoxin of diphtheria, as a curative and immunizing agent, nevertheless, in the fall of 1897, the Staff was very much embarrassed by the appearance of diphtheria among children that had been resident in the institution for some months. Many attempts were made to eradicate the disease by thorough disinfection and improvement in the plumbing and hygienic surroundings, but all seemed futile.

In November, 1897, the number of cases greatly increased. Several children that had been discharged, but who were permitted to stay in the institution until after the Thanksgiving holiday, became victims, so I obtained the consent of my colleagues to administer the immunizing dose to every child in the hospital, as well as to every one that should be admitted during the year beginning December 1, 1897, regardless of the nature of the disease at the time of admission, to guard against such calamities. This plan was strictly pursued until the latter part of August, 1898, when the surgeon in charge directed that no more cases admitted to his service should receive the antitoxin, so from this date the surgical cases admitted were exempted.

My object in administering the immunizing dose was to determine:

First.—The effect of antitoxin in preventing the further spread of diphtheria in the institution.

Second.—The duration of the immunity afforded by the antitoxin.

Third.—The effect of the antitoxin upon the kidney, as evidenced by the condition of the urine before and after its administration.

Fourth.—To record all of the disagreeable symptoms produced or suppose to be produced by the administration of the antitoxin.

The following table shows the diseases from which the patients were suffering at the time the immunizing dose was administered.

LIST OF DISEASES FROM WHICH PATIENTS WERE SUFFERING AT TIME OF ADMINISTRATION.

Abscesses, 5; adenitis, 9; adenoids, 1; anæmia, 1; angioma, 2; appendicitis, 3; arthritis of knee, 10; bronchitis, 29; burns, 9; cachexia, malarial, 1; chorea, 4; cicatrix, 1; conjunctivitis, 7; contusion of hip, 1; curved tibia, 5; cystitis, 1; dermatitis, 2; eczema, 10; empyema, 2; endocarditis, 6; enteritis, 2; enterocolitis, 2; eneuresis, 6; epilepsy (petit mal), 3; fecal impaction, 1; fever, enteric, 32; fever, intermittent, 18; fever, remittent, 15; fractures, miscellaneous, 19; furunculosis, 1; gastritis, acute, 2; harelip, 2; helminthiasis, 2; hernia, inguinal, 2; hydrocephalus, 1; idiocy, 1; imbecility, 1; infected finger, 1; influenza, 2; innutrition, 4; intestinal catarrh, 2; intestinal indigestion, 15; keratitis 15; leucoderma, 1; marasmus, 1; meningitis, 3; morbus coxæ, 10; nephritis, 2; neuralgia of face, 1; ophthalmia, purulenta, 5; osteo-myelitis, 13; otitis media (suppurat.), 7; paralysis, infantile, 3; peritonitis, tubercular, 1; pertussis, 1; pharyngitis, acute, 1; phimosis, 15; pneumonia, broncho, 11; pneumonia, lobar, 12; poisoning of olei gaultheriæ, 1; prolapse of rectum, 2; rachitis, 10; rheumatism, 1; sarcoma, 3; scorbutus, 1; seborrhœa sicca, 1; spondylitis, 3; sprain of ankle, 1; strabismus, 1; stricture of œsophagus, 3; syphilis, congenital, 3; talipes valgus, 3; tinea capitis, 5; tonsillitis, 2; torticollis, 1; tuberculosis, 20; ulcer, head, 2; urethritis, specific, 5; vaginitis, specific, 7; wounds, 2; total, 422.

From the above table it will be seen that there is ample opportunity to study any ill effects which antitoxin might produce.

So much has been written and so much more said about the injurious effects of antitoxin, when administered as a curative agent in previously healthy children, that I considered this institution a good field for studying the ill effects, if any, as well as the good. Many of the patients whose ailments are recorded above, were extremely ill when admitted to the institution, but this did not deter us from pursuing our work. As recently diphtheria had evidently been contracted by several very sick children a few days after their admission, we felt justified in trying the experiment, believing as we did, that they might contract diphtheria and die, while the protective dose of antitoxin would give them an opportunity of recovering from the disease for which they were admitted. It must be borne in mind that all of the children in this institution are under treatment, and that many of them had been in the hospital long enough to become hospitalized. Under such circumstances, it would naturally appear that they were much less favorable for injection than perfectly healthy children seen in private practice; hence it would seem that if any deleterious effects were to be produced by the immunizing dose itself, these children would be more liable to injury than the perfectly healthy.

Of the children, 422 received the immunizing dose; 100 units were given to infants, and 250 units to those between two and six years of age, and from 300 to 500 units above this age. Of this number seventeen, or 4.28 per cent., contracted diphtheria. The ages varied from one month to twelve years, and the list included male and female, white and colored. In those children that subsequently contracted diphtheria, the curative dose was administered as soon as the clinical diagnosis was made. In all the cases of diphtheria, the bacteriological examination confirmed the clinical diagnosis.

The following cases are given to illustrate the duration of the immunity.

CASE I.—E. H., male; five years old; adenitis, cervical; December 3, 1897, 250 units; diphtheria January 3, 1898; duration of immunity one month. Discharged from quarantine February 7, 1899.

CASE II.—B. H., female; five years old; keratitis, scrofulosa; December 26, 1897, 250 units; diphtheria January 18, 1898; du-

ration of immunity twenty-three days. Discharged from quarantine February 17, 1898.

CASE III.—R. J., female; eight years old; tuberculosis, pulmonary; December 20, 1897, 250 units; diphtheria January 24, 1898; duration of immunity one month, four days. Discharged from quarantine February 17, 1898.

CASE IV.—A. W., female; eleven years old; gastritis, chronic; January 25, 1898, 250 units; diphtheria February 7, 1898; duration of immunity eleven days. Discharged from quarantine February 26, 1898.

CASE V.—J. H., male; twenty-two months old; rachitis, acute; December 24, 1897, 250 units; diphtheria February 7, 1898; duration of immunity one month, fourteen days. Discharged from quarantine February 26, 1898.

CASE VI.—R. M., female; nine years old; enteric fever; January 11, 1898, 250 units; diphtheria April 5, 1898; duration of immunity three months, twenty-four days.

CASE VII.—M. F., female; ten years old; necrosis of os calcis; January 11, 1898, 250 units; diphtheria April 5, 1898; duration of immunity three months, twenty-four days.

CASE VIII.—E. S., female; two and a half years old; broncho-pneumonia; February 26, 1898, 250 units; diphtheria April 5, 1898; duration of immunity one month, seven days. Discharged from quarantine May 9, 1898.

CASE IX.—F. M., male; one year old; phimosis; April 7, 1898, 250 units; diphtheria April 22, 1898; duration of immunity fifteen days. Discharged from quarantine June 8, 1898.

CASE X.—A. B., female; two years old; scorbutus; December 2, 1897, 250 units; diphtheria April 26, 1898; duration of immunity five months, twenty-four days. Discharged from quarantine May 20, 1898.

CASE XI.—W. S., male; three years old; rachitis; March 18, 1898, 250 units; diphtheria April 11, 1898; duration of immunity twenty-two days. Discharged from quarantine May 14, 1898, and died May 21, 1898.

CASE XII.—H. A., female; six years old; osteo-myelitis; May 25, 1898, 250 units; diphtheria June 11, 1898; duration of immunity seventeen days. Discharged from quarantine July 28, 1898.

CASE XIII.—R. R., female; seventeen months old; enteritis; June 15, 1898, 100 units; diphtheria July 1, 1898; duration of immunity fifteen days. Died July 14, 1898.

CASES VI. and VII. developed scarlet fever in conjunction with diphtheria, and were discharged from quarantine May 8, 1898.

CASE XIV.—R. G., male; ten years old; cervical adenitis; June 8, 1898, 250 units; diphtheria July 11, 1898; duration of immunity one month, three days. Discharged from quarantine July 27, 1898.

CASE XV.—M. R., female; three years old; general tuberculosis; June 16, 1898, 250 units; diphtheria August 20, 1898; duration of immunity two months, four days. Discharged from quarantine August 24, 1898.

CASE XVI.—R. O., female; six years old; enteric fever; September 8, 1898, 250 units; diphtheria October 5, 1898; duration of immunity twenty-seven days.

CASE XVII.—E. M., female; seven years old; enteric fever; July 10, 1898, 250 units; diphtheria October 5, 1898; duration of immunity two months, twenty-five days. Discharged from quarantine November 14, 1898.

In an infant two years old, who received 250 units, the maximum duration was five months, twenty-four days, and the minimum duration was eleven days, in a girl eleven years old, who also received 250 units. The average duration of immunity for the seventeen cases was 51.1 days.

Two of the seventeen cases died, or 11.7 per cent. One, seventeen months old, received 100 units fifteen days before the appearance of diphtheria, and died on the fourteenth day of the disease. The other, three years old, received 250 units twenty-two days before the appearance of diphtheria, was discharged from quarantine on the twenty-third day of the disease, and died seven days later from heart failure.

To determine the effect of the antitoxin upon the kidney, as evidenced by the condition of the urine, careful examinations were made in every case. As soon as possible after admission a specimen of the patient's urine was obtained, and a complete urinalysis made. The immunizing dose was then administered, and the following day another analysis made, and in some cases for several days.

In twenty-one cases albumin was found in the urine before and after antitoxin was administered, but was neither increased nor decreased. In one case albumin was found before, but could not be detected after immunizing.

In twelve cases there existed vaginal or urethral discharge, and albumin and pus were found in the urine. There was no other evidence of nephritis, and when the discharge disappeared the urine became normal. In two cases of nephritis, albumin

was found in the urine before and after immunizing. In one of these cases the child was in the last stages of chronic parenchymatous nephritis. He was excreting but a small quantity of urine, the percentage of urea was very low, and casts very numerous. There was general anasarca, and pulmonary œdema was very extensive. This child was exhibited at the Clinic as a hopeless case, and it was not intended that he should be immunized. He received, however, 250 units, and singular to state, his condition began to improve at once, the urine and urea increased, the casts became less, the anasarca disappeared, and the boy was subsequently exhibited at the Clinic and was not recognized by the class. While the improvement was marked, it is impossible to attribute it to the antitoxin, but this much is certain, that it did not produce any serious effects upon the child. The patient subsequently died from recurrence of the pulmonary œdema.

In twenty-three cases of tuberculosis, albumin and hyaline casts were found before and after dosage.

In a case of remittent fever, with albumin, blood and epithelial casts in the urine, no change was noted. In the case of osteo-myelitis, albumin and casts were found in the urine, but no effect was noted after dosage. In the case of fracture of the femur, albumin and casts were found in the urine before and after dosage.

In 420 cases no manifestations which could by any possibility be attributed to the effect of antitoxin were noted.

Urticaria appeared in two cases; in one, osteo-myelitis, the rash appeared on the seventh day after the dosage, and was general, but most marked on the face. In the other, phimosis, it developed one hour after the administration of antitoxin, and was most marked on the face, neck and chest.

In injecting the antitoxin, antiseptic measures were observed, and there were no abscesses at the point of injection.

From the cases herein cited, it will be seen that three occurred in January, two in February, six in April, one in June, two in July, one in August, and two in October.

The conclusions which I would draw from the results of these observations are:

First.—It is impossible to draw any definite conclusions as to the value of the immunizing dose of antitoxin. I am con-

vinced, however, that the dosage was too small, and that if more units had been given, better results would have been obtained.

Second.—The average duration of the immunity, as revealed by the observations, conforms with that obtained by other observers. We seem warranted in asserting that the larger the immunizing dose, the longer the duration of immunity.

Third.—The immunizing dose of antitoxin has no injurious effect upon the kidney.

Fourth.—Urticaria appeared in two cases, which was the only pathological effect of the antitoxin observed.

I wish to acknowledge the valuable assistance rendered me by Drs. Wall and Fisher.

1 DUPONT CIRCLE.

Venesection in Children's Diseases.—A. Baginsky (*Berl. klin. Woch.*), first refers to the history of venesection, and discusses the question as to whether there are not some diseases in which it might be used with benefit. He gives details of two cases in which it was successfully employed: the one in a child aged seven and one-half with uncompensated cardiac disease, and the other in a boy aged nine with cirrhosis of the lung and bronchiectasis. In these cases the author thinks that the venesection exercised a life-saving effect in the dangerous suffocative attacks. Details are then given of a third case of bronchopneumonia in a child, aged seven, who was *in extremis*. As no blood could be obtained from the median veins, the left radial artery was opened, and 30 c.cm. of blood let out. The effects of the venesection in these cases is a mechanical one of relieving the circulation. Baginsky has not always had the good results noted in these three cases, but there were then other dangers present besides the mechanical hindrance to the circulation. Venesection is more difficult in children than adults. It is better to lay bare the vein under aseptic precautions, and then to open it. The author refers to the more local blood-letting, as by leeches. There are particularly two forms of disease in which such blood-letting may be of use, namely, simple eclampsia in the child and uræmic eclampsia. There are many valuable remedies for simple eclampsia, so that it is less necessary to perform venesection here unless these remedies fail. Here also venesection acts in a mechanical manner. The author says that he has employed this measure in a considerable number of cases of eclampsia, and he gives details of one in which it was used with the best results.—*British Medical Journal.*

BRIEF REPORTS OF INTERESTING CASES.*

BY J. P. CROZER GRIFFITH, M.D.,

Clinical Professor of Diseases of Children, in the University of Pennsylvania, Philadelphia.

(*Continued from page 333.*)

NERVOUS INCONTINENCE OF FÆCES.

This condition is certainly a very uncommon one. I have met with but the one instance of it, that now reported, and text-books make but little or no reference to it. It is closely allied to incontinence of urine, and, indeed, in the case to be detailed, was associated with it, as well as with other evidences of an irritable nervous system.

James Q., eight years old. The maternal aunt had chorea, and the child's mother is a very nervous woman, and says that she was especially so while pregnant before his birth. James has always been a nervous child, and has always suffered from incontinence of urine, both nocturnal and diurnal. He has also for a couple of years had twitching of the face and shoulders. He has suffered, too, from incontinence of fæces since birth, never having learned to control the emptying of his bowels. There are usually two or three stools daily, and these are generally formed except under the influence of certain foods. The fæces are not passed unconsciously. A sudden desire seizes him to have an evacuation, and the stool is passed in the clothing before a place for relief can be reached. No cramp or other painful sensation attends the evacuation. Punishment has seemed only to make the condition worse. The affection has been a source of great mortification to the child. Neither excitement of any sort nor any other cause can be discovered as a prominent factor. The condition has persisted steadily without any periods of improvement and with very little difference in degree, except that any tendency to looseness of the bowels increases the frequency of evacuation. There appears to be no relation between the degree of general nervousness, enuresis and the incontinence of fæces.

Examination on October 17, 1898, showed a slightly built but otherwise well-developed boy. The prepuce was rather long, but without adhesions. The rectum exhibited nothing abnormal on digital exploration. The child twitched considerably as though suffering from chorea, although the long-continuance of this seemed to indicate rather a habit spasm.

He was placed under treatment with Fowler's solution and increasing doses of tincture of belladonna. In one week the diurnal enuresis was somewhat improved, the twitching better

* Read before the Philadelphia Pediatric Society, March 14, 1899.

and the control over the bowels greater. By October 29th the incontinence of fæces had nearly disappeared, although the enuresis was not greatly improved in spite of the pushing of the belladonna to the production of an erythema. By November 3d the fæcal incontinence seemed to be entirely cured, but the enuresis was as bad as ever. On December 1st the mother reported the entire absence of fæcal incontinence since the last date, with the exception of a slight return on one occasion when an attack of diarrhœa had occurred. The diurnal incontinence had ceased, but the nocturnal incontinence was still troublesome. He had been taking belladonna persistently in full doses to the production of its physiological effect.

He was under observation until towards the end of December, and during this time there was no return of the fæcal incontinence. He was then lost sight of until March 11. Treatment had been discontinued, and there had been a return of the trouble with the bowels, although by no means to the extent present before he first came under observation. Treatment was renewed.

ANGIO-NEUROTIC ŒDEMA IN A CHILD.

Two years ago Dr. W. S. Newcomet and myself reported a couple of cases of angio-neurotic œdema occurring in infancy, and collected all the published reports we could find of this condition developing in early life. They were very few in number. The following case is another instance of this curious disease. It was associated in this instance with urticaria, and appeared to have been due to gastro-intestinal disturbance, with the possible, although doubtful, influence of exposure to cold; in all these respects exhibiting the relations not infrequently seen in this affection.

Thelma M., two years old. When about fifteen months old, in the spring of 1898, she had whooping-cough followed by a pneumonia from which she recovered slowly, with persistence of slight consolidation, and a tendency to fever lasting until early summer. During the summer she was in good health, except that on two occasions there developed a sudden swelling of the hands, lasting a few days only. The last of October there occurred an erythematous rash under the chin and a few spots on the face accompanied by some abdominal pain.

December 27th was a very cold day, and the child was exposed to it, but without any apparent ill effect. The bowels had been constipated and the appetite poor. The night of the 28th she slept badly, and on the morning of the 29th, both hands began to swell. Examination on December 30th, showed the right hand swollen throughout, tense, slightly red, not painful or itching. The entire forearm up to the elbow was in a

similar condition. The outer half of the left hand, not including the fingers, was similarly swollen. A small, hard œdematous spot, not red, was present on the chin, and a similar spot on the right cheek.

This condition lasted with gradual improvement for about five days. Then in a week it returned, on this occasion affecting the left hand and arm up to the elbow, although not with so great swelling as in the right arm on the former occasion. Constipation was present in this last attack also. The swelling was attended by a slight eruption of urticaria on the body.

I saw her last on March 11th. There had been no further trouble until within two weeks. Then a swelling developed on the first finger of the left hand, beyond the metacarpo-phalangeal articulation, and persisted unchanged. It was cylindrical, hard, not red. Although possibly it is œdematous merely, it appears rather of the nature of a dactylitis. The tip of the right ear had been swollen and red for some days.

PERITONITIC PNEUMONIA.

Simon L., four years old, admitted to the Children's Hospital, January 19, 1899. After some previous malaise he was taken acutely ill on January 14th, and had suffered with obstinate constipation, abdominal distension, and pain and tenderness in the right iliac region. No note was made of cough. The physician who sent him to the hospital had already made the diagnosis of appendicitis. Examination on January 20th showed a child flushed and with an anxious expression, and evidently in great pain. The respirations were shallow and somewhat accelerated. The abdomen was not distended, but was tender and the recti rigid; both factors making palpation difficult. The tenderness was in the right iliac region, but no mass could be discovered. The temperature ranged from 103° to 105°. The legs were drawn up much of the time. The heart sounds were normal. The lungs exhibited anteriorly a few râles, and the respiration in axillæ was somewhat harsh on both sides. Owing to the pain in which the child was the back of the chest was not examined at this time. On the succeeding day, the 21st, there was much abdominal distension, with rigidity and tenderness over the same regions as noted before. Examination of the back of the chest on this date revealed the presence of pneumonic consolidation of the left lung. The temperature was still elevated, usually above 103°. On January 22d the abdomen was soft, and no induration or tenderness could be found. The case was now clearly one of pneumonia, without any affection of the abdominal organs. It ran a favorable course without return of abdominal symptoms, and terminated in crisis on January 24th.

This case well illustrates a condition sometimes seen: a

type of pneumonia which may be called "peritonitic," analogous to the "gastric," "cerebral," "abortive," and other forms often described. On a former occasion I reported a very similar case, which at first simulated peritonitis to such an extent that the diagnosis of that disease seemed beyond question, until examination of the lungs revealed the true nature of the disease, and the following day showed a total disappearance of all abdominal symptoms.

In the case now reported the diagnosis of appendicitis seemed so probable, or rather, so certain, that the attending physician had already asked permission for operation, if necessary, but had been refused. In this diagnosis all who saw the child in the hospital entirely concurred. The more extended routine examination of the lungs had been deferred, for the reason stated, and because there seemed no grounds to suspect pulmonary involvement; for, although the rapid breathing of the child was noticed, this seemed entirely explicable by the presence of high fever and abdominal pain.

123 SOUTH EIGHTEENTH STREET.

Ophthalmia Neonatorum.—Sydney Stephenson (*Medical Press and Circular*) is of opinion that severe ophthalmia in the newly-born is practically always associated with the micrococci of gonorrhœa derived from the maternal passages. Vaginal discharges are common accompaniments of pregnancy, especially among the lower classes. Van Schaick has recently drawn attention to the frequency of gonorrhœa in married women, having found gonococci in no less than 26 per cent. of sixty-five married women who complained of gonorrhœa. A child traverses the vagina with closed lids, so that morbid secretions could hardly enter the eyes except through tardy labor, application of forceps, or repeated digital examinations on the part of the accoucheur. It is generally admitted, however, that infective material is far more likely to gain entrance to the conjunctival sac shortly after birth, for the discharge clings to the eyelids and lashes, and, as a rule, is carried into the eyes either by the blinking of the baby or by the water and sponges and towels used for the first bath. As a rare event, a child may be born with a fully developed ophthalmia, due probably to rupture of the membranes several days before birth.—*American Journal of Obstetrics.*

REMARKS ON THE DIAGNOSIS OF CEREBELLAR ABSCESS IN CHILDREN.*

BY L. J. HAMMOND, M.D.,
Surgeon to Samaritan Hospital, Philadelphia.

The greater susceptibility of children to suppurative inflammations of the nasal and tympanic cavities, the mastoid cells and the eye, resulting from the exanthematous diseases, renders them more liable to pyæma of the encephalon than after this age has passed.

It has never been satisfactorily determined just what region of the brain is more liable to be the seat of abscess from these sources; Holt, however, affirms that the cerebellar is secondary to the temporo-sphenoidal lobe. Rotch is disposed to consider the cerebellum as the more frequent seat of infantile abscess.

It is very clear, as shown by the analysis of reported cases, that most brain abscesses are due to pathologic conditions of the nasal, tympanic or mastoid cavities. The surgical report of St. Thomas Hospital for 1895, reports one case; the Boston Infirmary in its annual report for 1898, reports two cases, neither of the latter having been diagnosticated previous to the autopsies.

Traumatism, however, must be looked upon as certainly a most likely cause, and here it must not be forgotten that an apparently trifling blow, which may produce merely a contusion of the scalp, can give rise to extensive, deep-seated disease, and even abscess. From this source, the diagnosis would usually be readily made, as we would expect to find the abscess directly beneath the infected area.

Most text-books place but little stress on any but cerebral or extra-dural abscesses. In adults there seems to be but little doubt that abscesses in this region are more frequently found than in the cerebellar. In children, however, this is unquestionably not the case, and I believe it to be extremely rare to find them, either from ethmoidal or mastoid pyæma, as frequently in any part of the brain as the cerebellar. It may be said to be the vulnerable area in childhood for pyæmic conditions to develop.

A possible explanation for this may be found in the lesser density of the outer table of the mastoid bone, and also of the

* Read before the Philadelphia Pediatric Society, March 14, 1899.

nasal structures. It is well known that in children (this of course means before the age of puberty), the outer table being so delicate, seldom permits of the retention of the pus in the mastoid cells for any length of time, and as a result of this, we have early rupture and evacuation of the purulent contents, that, in adult life would be locked up and held as a source of infection for a much longer period.

Early spontaneous evacuation of the pus may also offer an explanation as to why extra-dural abscesses or those involving the middle cerebral fossa, are less likely to occur during infancy than in adult life, they being due, in a great measure, to direct infection, *i.e.*, by continuity.

Let the explanation be what it may, my personal experience with five cases of cerebellar abscess during the past four years, has been in children between the ages of two and a half and five years, with no pyæma in any other portion of the brain; while on the other hand, in adults during this period, I have seen no case of cerebellar abscess, but three of abscess in the cerebrum, and from the same infectious sources, would lead me to the belief that in children from the beginning of dentition until the age of five or six years, it becomes a matter of great importance for us to determine what definite line of symptoms, if any, would positively determine the existence of abscess in this portion of the brain. Certain it is, that symptoms usually ascribed to cerebellar localizations, are unreliable in patients at this age. There is, however, a line of symptoms that goes to determine beyond a doubt the presence of abscess in this region.

For the purpose of bringing out the symptoms of a typical cerebellar abscess, I will recite the history of a case that came under my observation eight months ago:

The patient, a little girl, two and a half years of age, with good family history, was in the best of health until five weeks before I saw her, when she contracted scarlet fever, which I understand, ran the usual course of this disease, the child being up and about three weeks after the disease was contracted. During the third week of her illness, the attending physician first detected suppuration from the right auditory canal, and a few days later, swelling over the mastoid made its appearance. An incision into this by the physician, succeeded in evacuating a considerable quantity of pus. It was still suppurating when

I saw her about five weeks after illness began. Before this illness she was a well developed, bright and active child. When seen by me she was greatly emaciated, lying on the left side with limbs flexed upon the thighs and the thighs upon the abdomen, forearms flexed upon the arms, arms flexed and carried in a constantly sweeping manner across to the right side, and every four or five minutes there were outbursts of incoherent mutterings, subsiding within a minute or two, tremors coming on at intervals of ten minutes, lasting from one to two minutes, giving way to extreme exhaustion; during this exhausted period there was a half unconscious condition, and there was also apparent inability to appreciate anything that was said to her. When requested to show the tongue, it was protruded, but when told to return it to her mouth, did so only to at once protrude it again. She seemed to appreciate my request to show the tongue, but seemed unable to cease the appreciation. There was great restlessness, the child constantly moving the arms and endeavoring to flex the limbs more tightly, the head thrown backward, mouth partly open, scaphoid abdomen, pupils widely dilated though not fixed, responding slightly to the lighted match, but instantly dilating when the light was withdrawn. Ophthalmoscopic examinations of the eye grounds showed nothing more than a mere clouding, there being no positive evidence of pressure along the optic tract. The respirations were nine per minute, bowels obstinately constipated, and the excretion of urine small in quantity and giving the sugar reaction. Could not determine whether headache had been complained of. The tongue was dry with a brownish, central fur, body skin scaly and forehead bathed in perspiration. The temperature per rectum was 94°, and the pulse 110, decidedly thready.

There were no evidences of paralysis, though when the child was raised by placing one hand into each axilla, the head still thrown backward, would incline toward the right. The arms were constantly swept toward the right, and even when held in this position, there was this pronounced flexion of the lower limbs.

The question of great importance now arises, what symptoms among this group can be relied upon to determine whether the pathologic lesion is cerebellar, as many of the symptoms here narrated are known to exist in other diseases of the brain and its meninges.

That there are in this group, enough symptoms to determine the existence of cerebellar abscess, I need only refer to three autopsies that I have made that verify the diagnosis made before death, and one where operation evacuated fully one-half ounce of pus. In the fifth case, I considered that the abscess was either in the cerebellar or in the extreme apex of the temporal lobe, rather favoring the cerebellar as the more likely position, and the autopsy showed it to be cerebellar.

To summarize, it may, with a degree of accuracy, be stated that given a case of pyæma of the sinuses accessory to the brain, or a history of trauma, with rapid loss of flesh and strength, rapid pulse and high temperature for the first seventy-two hours, followed by a decline in temperature and an increase of the rapidity of the pulse, with pronounced flexure of the extremities, progressive increase in the dilatation of the pupils, never, however, becoming fixed, half unconscious condition with uncontrollable restlessness, a peculiar indisposition on the part of the patient to obey requests made, the presence of sugar in the urine, slow respirations (eight to twelve per minute), tendency if standing, to go toward one side, swinging of the hands, always toward one side, and entire absence of paralysis: this group of symptoms does not, so far as I know, occur in any other disease of childhood, and to my own mind, is symptomatic of abscess within the cerebellum.

The presence of sugar is a very important symptom, and I believe lends some weight toward the possibility of determining the size of the abscess from the pressure within the cerebellum, as we would scarcely expect to have the glycosuric area seriously affected without the pressure being sufficiently great to interfere with the fourth ventricle. This pressure may be so great as to produce marked internal hydrocephalus, as was shown to exist in two of the cases on which I made autopsies, showing that the pressure may be so great as to not only narrow the fourth ventricle, but also to compress the aqueduct of Sylvius.

It must also be borne in mind that where there are no evidences to show that the infection is through the ear, there may still be defective hearing from pressure on the linea transversa, part of which fibres joins the origin of the auditory nerve. Indeed most of the special senses are likely to be affected from pressure, even when the abscess is quite small, because of the

deepness of the white matter in the cerebellum, which is always the portion that is the primary seat of abscess.

With the means of early diagnosis at hand this, at present, fatal condition, should have its mortality greatly reduced. It is only, however, by early recognition and prompt surgical intervention that the present death rate of 100 per cent. can be lessened, it being beyond the scope of medical treatment, and no time should be lost in trephining and evacuation of the pus; the trephine opening being made below the inferior curved line of the occipital bone, should expose the pouting dura directly over the hemisphere, and if the abscess has not reached a great size, it would be necessary to make a deep puncture before it can be evacuated, owing to the greater amount of gray matter, the septic fossi being at the same time removed.

712 SOUTH TENTH STREET.

Beriberi in Sucklings.—Hirota (*Centralblatt f. inn. Med.* 1898. No. 16) has made an important observation on a disease in infants nursed by mothers with beriberi. It has been thought that beriberi never occurred in children before the second dentition. The author, however, has been able to see fifty-two cases of the affection in infants of from one to thirteen months. All were nursed by women with beriberi. Five died, five more could not be followed up. Medicines had no effect on the symptoms, but all the cases that recovered did so within a few days after the patients were put on cow's milk, condensed milk, or nursed by healthy women. From the rapidity of the improvement it could hardly be thought that the symptoms were due to anything but an intoxication from the milk. A comparison of the symptoms shows a close resemblance with those of beriberi in the adult. Diarrhœa, uncommon in adults with beriberi, was sometimes present, and the indican reaction almost always present in beriberi was absent (perhaps on account of the diarrhœa). The author looks on these observations as proving that beriberi is the result of an intoxication, although he has been unable to find the toxic substance.—*American Journal of the Medical Sciences.*

Clinical Memoranda.

A CASE OF ABSCESS OF THE LUNG, FOLLOWING PNEUMONIA. RESECTION OF RIBS—RECOVERY.*

BY B. VAN D. HEDGES, M.D.,
Plainfield, N. J.

Pneumonia, empyæma, abscess of the lung, operation and recovery, is the history in brief of the patient we have the privilege of presenting before the Section this evening.

Theodore S. first came under our care on the 20th of March, 1896, when he was six years old. He had always been a thin, wiry little fellow, with a clean bill of health until the date of his present illness. Father and mother both strong and well, with no specific, tubercular or rheumatic history.

About the first of March, after exposure to cold and wet, he was taken at his home in Brooklyn with a severe chill, followed by high fever, cough, rapid breathing and marked prostration. These symptoms, we are told, continued for about ten days, when there was a drop in the morning temperature. The child's general condition, however, showed no improvement, and ten days later he was sent to Plainfield, in the hope that a change to country air would hasten convalescence.

I first saw him on the afternoon of March 20th, the day of his arrival, and three weeks from the onset of his disease. He had an anxious, drawn look to his face, and an almost constant, irritating cough with no expectoration. Respirations 65; pulse 170; rectal temperature, 104.8.

Physical examination showed a normal right chest. On the left side there was a slight bulging of the intercostal spaces and an increase over the right side of three-quarters of an inch in the semi-circumference. As far as the nipple line anteriorly, and to the spine of the scapula behind, there was flatness on percussion, loss of vocal fremitus and distant voice sounds, except over the upper portion of this area posteriorly where the vocal resonance was increased.

The stomach was rebellious, retaining but little nourishment. Emaciation very pronounced.

* Read before the Pediatric Section, New York Academy of Medicine, April 13, 1899.

My brother, Dr. E. W. Hedges, saw him with me late that same evening, and we decided upon an exploratory puncture early the next morning.

Under chloroform the needle was introduced in the eighth space posteriorly, just beneath the tip of the scapula, and a drachm of sero-purulent fluid withdrawn. A portion of the seventh rib was then excised and free drainage established, with the escape of over a pint of this same fluid. The patient stood the operation well. That afternoon the temperature fell to 103°; the next morning to 101° and fluctuated between these two points for the next five days. There was a corresponding fall of 20 or 30 beats in the pulse. At the end of forty-eight hours, the discharge from the wound had grown very much less. A week later it had almost ceased.

The other symptoms, however, grew steadily worse. There were frequent chills, followed by sweating and a rise of temperature to 105°. Pulse and respiration both became more rapid, the expectoration more profuse and offensive.

On the 8th of April the evidences of pent up pus became so apparent that further operative treatment was decided upon. The absence of discharge from the wound, and the nasty character of the expectoration led us to believe that this focus was in the lung tissue itself.

The diagnosis was confirmed by the withdrawal of thick, creamy pus through a needle, introduced in the seventh space, mid-axillary line. About one inch of the overlying rib was removed and the pleural cavity searched with negative results for any concealed pockets. Along the path of the needle, an incision with the scalpel was then made into the lung substance for a distance of two inches, allowing free escape to the contents of the abscess cavity. A small rubber tube was inserted for drainage.

The patient's condition for the next ten days was most critical, with a temperature varying from 103° to 105.5°, pulse from 140 to 180 and respirations between 60 and 70.

The amount of discharge was most copious, the odor most terribly offensive.

Large doses of strychnine were given hypodermically, and fortunately the stomach retained whiskey and concentrated foods in sufficient quantity, so that at the end of three weeks from the second operation there was a decided improvement in all the symptoms.

One week later the discharge had about ceased and the tube was removed. From this time on convalescence was rapid, and by the 18th of May the wound had entirely healed. Careful examination of the expectoration failed to show the presence of any tubercle bacilli. Three months spent in the Adirondacks the following summer gave fifteen pounds avoirdupois to his credit, and a new lease of life. His health has been excellent ever since.

We find him to-day, just three years after the operation, with an expansion of 2½ inches, rather distant breathing over the area originally involved, and numerous râles heard close under the ear on inspiration. As to his powers of endurance, he is able to take an active part in all athletics, is captain of a local base ball nine, and among boys of his age, ranks second to none in intellectual and physical ability.

703 WATCHUNG AVENUE.

Oil of Gaultheria in Chorea.—Luigi (*Rif. Med.*) has met with considerable success in the treatment of chorea by means of oil of gaultheria used externally. He used from six to ten grams of the oil, either pure or mixed with vaseline, as dressing for the upper and lower limbs, alternately, the limbs being afterwards covered with oiled silk to prevent evaporation. Phenol could be detected in the urine six hours after the oil was applied. In some of the cases the drug was given internally as well. The results were very satisfactory, so that the author recommends its use, especially in cases where the other salicylates are not well tolerated. Moreover, the good effects were not confined to cases where distinctly rheumatic symptoms were present.—*British Medical Journal.*

Cyclic Hematuria in Children.—Dr. Durante (*Jour. de Méd.*), has had under observation several cases of hematuria in children. Repeated examinations excluded the possibility of organic disease, tuberculous or malignant growth, and the author explains the hematuria as due to simple idiopathic renal hemorrhage, analogous to epistaxis. The cause may be a defect in the development of the capillary walls.—*Medico-Surgical Bulletin.*

THE ADMINISTRATION OF ANTITOXIN BY MOUTH.

BY WARD B. WHITCOMB, M.D.,
Batavia, N. Y.

Having seen an account of the use of diphtheria antitoxin by mouth, as reported by Dr. Zohorsky, I wish to report an instance where such administration seemed to be efficacious.

In the family of Mr. Q. there are seven members: Mr. and Mrs. Q., Sr., aged fifty-seven and forty-five years; L. Q. and wife, aged twenty-six and twenty-seven years; and J. Q. and wife, aged twenty-four and twenty-three years, and an infant daughter of last named couple, aged eighteen months.

On February 13, 1899, I discovered that the wife of J. Q. was suffering with a severe form of faucial diphtheria. There was a solid field of membrane, extending beyond view into the posterior nares, and downwards. A history of the case elicited the fact that her sore throat began on February 9th. At 11 A.M. of the 13th her temperature was 104.6° and pulse 146, being very weak and somewhat irregular in volume. As only a clinical diagnosis was made, I have gone somewhat into details in order to meet possible objections as to the nature of the disease.

The patient, Mrs. J. Q., received 3,000 units of antitoxin by injection. The male members of the family each received 666 units by the same method. Mrs. Q., Sr., was given 1,500 units; Mrs. L. Q., 1,000 units; and the little girl 1,000 units, all by mouth.

The patient was isolated, and cared for by Mrs. Q., Sr., who slept in an adjoining room.

Every member of the family had been exposed during the period from February 9th to 13th, as the patient, Mrs. J. Q., had sat in the living room during the days mentioned, and slept with her mother-in-law, Mrs. Q., Sr., in an adjoining bedroom, on the 9th, 10th, and 11th insts. The members of the family to whom I gave antitoxin, as stated above, remained absolutely well.

Mrs. L. Q., while visiting her sister in Buffalo, in December, 1898, contracted diphtheria from her, was given an injection of antitoxin, recovered, and remained two weeks after her throat was declared free from germs by a bacteriologist, returning home about January 1, 1899.

As throwing some light upon the length of time that anti-

toxin may remain reliable, I will state that the packets used were dated August 26, 1898.

The effect of the injection upon Mrs. J. Q. was immediate, and most gratifying. This was an ideal case for the spread of the disease, as the little girl was held and nursed by the patient, her mother, and indiscriminately held and fondled by the other members of the family, until her mother was isolated.

Here were six people exposed to infection. The three subjected to the greatest exposure received antitoxin by the mouth; the other three by injection, and all escaped the disease. Was this due to one of those lucky chances, whereby the improbable and seemingly impossible happens; or was it due to the remedy used? I believe the latter explanation is the true one.

I was compelled, by objections raised, to use the antitoxin as I did, or utterly forego its employment.

Diphtheria Noma.—Freymuth and Petruschky (*Deut. med. Woch.*) relate a second case of this disease. A boy, aged eight, was admitted under Freymuth in the fifth week of enteric fever. He was drowsy and heavy, and the rectal temperature was 40.9° C. The serum test gave a positive reaction. About a week later there was stomatitis, with blood-stained and ill-smelling saliva. The mucous membrane about one of the upper teeth became discolored, and a few days later the corresponding part of the cheek was involved. Diphtheria bacilli were found by Petruschky. Fifteen hundred immunity units of diphtheria serum were immediately injected, and another 1,000 on each of the following six days. Two similar injections were again given four and seven days later respectively, so that the child received in all 9,500 units. The process extended at first, but then came to a standstill. The right cheek, the right half of the lips, and the submaxillary region were converted into a hard and swollen mass. The left side remained unaffected. At one time the child appeared to be dying, the pulse being 160 and irregular, and the temperature 40.2° C. A line of demarcation then appeared, but the recovery was further delayed by two abscesses in the subcutaneous tissue of the trunk. A plastic operation would be necessary. The serum treatment was at least harmless; in fact it appeared to assist in the recovery. If used earlier, it might have arrested the disease sooner. Petruschky remarks that typhoid bacilli were here excreted in large quantities in the urine. Besides diphtheria bacilli in the secretion from the mouth there were numerous fine spirilla and cocci.—*British Medical Journal.*

Clinical Sketch.

FACIAL ECZEMA.

BY FLOYD M. CRANDALL, M.D.

Eczema is the most common skin disease of infancy and childhood. It appears more frequently upon the face than upon any other portion of the body. Its favorite site is the cheeks and forehead. It usually appears in patches of varying size, but not infrequently covers the entire face.

At first it usually assumes the form known as eczema rubrum. At the outset it appears in small papules of reddish color, which extend and soon coalesce, the skin between becoming red and infiltrated. The surface soon becomes slightly squamous with a formation of scales. In most cases the area involved soon begins to show signs of moisture with more or less distinctly formed crusts. The crusts may be thin and small appearing only in places, and leaving the skin under them but little inflamed. In more serious cases, if the crusts are forcibly removed, an inflamed granular surface is left which discharges serum or sero-pus and frequently bleeds. The erythematous eczema sometimes seen in adults is very rare in infants and children.

Facial eczema is essentially a chronic disease, rebellious to treatment and prone to recur. Improvement is easily obtained, but complete cure is very difficult. Itching is always a prominent symptom and the scratching it induces is one of the causes for the stubbornness of the disease in children.

The accompanying photograph is that of an Italian baby nine months old, who was brought to the class of Dr. Walter Lester Carr, at the Out-door Department of Bellevue Hospital, for general weakness and facial eczema. The baby was rachitic but fat and in fair condition. Breast milk was its only food. The diet was changed to fresh cow's milk and cod-liver oil, the latter being given for the purpose of increasing nutrition. No local applications were made. Under this treatment the baby made a rapid recovery and the facial eczema soon disappeared.



FACIAL ECZEMA.

Occasional Periscope of Teratology.

BY J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S., ED.
Edinburgh, Scotland.

Bouchacourt: Radiography in Teratology. (*Progrès Médical*, No. 8. February 25, 1899.)

Bouchacourt dwells upon the value of radiography in the study of the skeleton of monstrosities. It is equivalent to a real dissection, saves time, and when no dissection is permitted it takes the place of one. It is to be combined with photography, and the two operations may be done in succession with Crooke's tubes of very different penetrability. By employing that of little penetrating power a true photograph, natural size, is obtained. By taking two stereoscopic process blocks, one of the external the other of the internal configuration of the teratological specimen, one can get all the data for its study. Bouchacourt had studied in this way a triple monster, two fœtuses with intra-uterine rickets, and two acephalic fœtuses, in one of which the radiograph revealed the existence of a rudimentary cranium. [The value of radiography for the study of the skeleton of a monstrosity is undoubtedly great, but when it is possible the dissection ought to be carried out, for it is only thus that the anomalies of other structures can be made out.—J. W. B.]

Coronado: Teratological Sequel of the Spanish-American War. (*La Habana Médica*, Vol. i., No. 5. December, 1898.)

Coronado gives the clinical details of the birth of a fœtus with hemicephaly, ectromely, and eventration. The parents were young; the father was a Spaniard, the mother a Cuban. The latter was in Manzanillo during the bombardment and was much terrified by the fall of a bomb-shell in her neighborhood. This was on the fifth day of the sixth month of her pregnancy. At the time she noticed absence of fœtal movements, nevertheless, miscarriage did not occur. She was afterwards taken in a small boat to Havana. Fœtal movements were again felt and the fœtal heart sounds were heard by her medical attendant; but on the twenty-fourth day of the same month labor pains supervened. It was a breech presentation and during each pain

a tumor protruded from the vulva, which turned out to be a right-sided scrotal hernia. The infant's heart beat feebly for a few minutes after birth. In addition to the eventration the fœtus showed defect of the ossification of the cranium and face, and stunted extremities. The author seems to ascribe the arrest of development at the sixth month to the fright which the mother received. Dr. Betancourt, in the course of some remarks on the specimen (which was shown at the meeting of the Academia de Ciencias of Havana on November 27, 1898) supported this view and pictured the fright causing a contraction of the uterine walls and so arresting the development of the contained fœtus. [Neither the data nor the dates in this case are very convincing, for it can hardly be regarded as in keeping with what is known of embryology to suppose that a fright at the sixth month could arrest processes which are finished before that date. It is possible, however, that other circumstances incident to a siege and to war (as was noted also in the siege of Paris in 1870) may by interfering with nutrition have led (before the bomb-shell episode) to disordered development in the fœtus. —J. W. B.]

Potier, F.: Congenital Radial Paralysis and an Amniotic Band. (*Bull. de la Soc. Anat. de Paris*, No. 9. 1898.)

The case was one of an infant born at term which had lived fifteen days, and had presented a right-sided radial paralysis noticed soon after birth. On the external surface of the arm at the point where the radial nerve traverses the humeral groove there was an irregular rather deep depression of the skin, a sort of cicatrix attributable to the pressure of an amniotic band. The radial paralysis was complete, affecting all the extensor muscles of the forearm. The skin of the limb was hard and thickened. The histological examination of the skin of the cicatricial area showed an increase in thickness and density of the dermis, a thickening of the rete Malpighii, and a marked development of sebaceous and sudoriparous glands. A piece of the affected muscle showed muscular fibres smaller than normal and less distinctly striated; the connective tissue surrounding them was more marked and denser than usual. The radial nerve was found to exhibit an increase in its connective tissue elements and evident changes in its nerve elements consisting in disappearance of nuclei and axis cylinders and retention of vestiges only

of myeline. Potier is of opinion that in this case the nerve and muscular elements did not first exist in a state of perfect development and then degenerate; he thinks, and his conclusion is logical, that they never existed in a state of complete development, and that they were simply hindered or arrested in their primitive development. He thinks further, that there was a peripheral paralysis caused by compression of the radial nerve in the humeral groove by an amniotic band. The trophic changes in the skin were consecutive.

Cousin, J.: Laryngeal Anomaly Hindering the Establishment of Respiration. (*Loire Médicale*, p. 44, February 15, 1899.)

Cousin reports a case of a well-formed male infant, the offspring of a multiparous woman thirty-six years of age, born with the help of forceps. The child made inspiratory efforts, but it could be seen that it did not respire although it was really living and moving its arms and legs. The skin remained white instead of taking on the usual rosy hue. The finger was introduced into the mouth to remove any mucus that might be hindering respiration; this provoked fresh efforts at breathing, but they were without result. The heart continued to beat regularly, and an attempt was made to introduce the insufflator of Ribemont into the larynx. It was then discovered that there was an imperforate condition of the larynx; the epiglottis was completely ossified and adhered in its whole circumference to the subjacent cartilage. The inspiratory efforts became fewer, the heart beats became slower, and the infant died in twenty-five minutes after birth. A tracheotomy would have been necessary to have assured the establishment of respiration. But even if the instruments to perform this had been at hand Cousin doubts whether the further operative interference which would have been required could have been expected to have overcome the ossification of the epiglottis.

Langer, J.: Situs Inversus Totalis with Cardiac Malformation in a Boy of Six Months. (*Prager Med. Wchnschr.*, p. 85. February, 1899.)

The patient was a six months old boy, the fourth child of a woman suffering from advanced phthisis. His birth took place without artificial aid, and it was stated that he was not "blue" at birth. He was poorly nourished, showed signs of rachitic

changes in the bones, and marked injection of the visible mucous membranes, especially of the middle of the tongue. Percussion of the chest revealed the fact that the heart dulness was absent from its usual position, while on the right side of the thorax was an oval area of dulness stretching from the second intercostal space to the under border of the sixth rib. A loud double murmur was heard both at the base and apex of the heart. The pulse rate was 120 per minute. There was also inversion of the liver, spleen, and stomach. The child died of sub-acute gastro-enteritis, chronic bronchitis and general marasmus. The autopsy revealed a very complete and perfect example of situs transversus viscerum. Even in small details such as the presence of the shorter vasdeferens on the right side instead of on the left and the shape of the kidneys the inversion was most exact. There was also tubercle of the lungs and lymphatic glands. The condition of the heart could not have been made out during life. It was briefly described as cor biloculare biventriculare cum hypoplasia ventriculi aortici. Pure arterial blood was found only in the pulmonary veins; the whole arterial system was supplied with a mixed blood. The lesser circulation was abnormal in so far that in place of a purely venous blood a mixed fluid circulated in the pulmonary artery. [The association of tubercle both in the mother and in the child with the visceral inversion and with the cardiac malformation which existed in this case is most interesting. It is a further proof that the ultimate causes of teratological developments, whatever may be their mode of action, are the same as the ultimate causes of diseases, *viz.*: syphilis, tubercle, alcohol, and other infections and poisons.—J. W. B.]

24 MELVILLE STREET.

Etiology of Infantile Cerebral Paralysis.—Koenig (*Deutsch. Zeitschr. f. Nervenheilkunde*), says that we know definitely of but three efficient causes, viz.: asphyctic birth, trauma of the head, and infectious diseases. All others can be but predisposing causes. Many of the cases are "without etiology," however, and in such cases the concurrence of several predisposing causes has a certain value. The traumatic variety cannot be set apart as an entirely distinct condition. A neuropathic inheritance and alcoholism in the father play some part in predisposition; likewise any family cachexia, especially tuberculosis—although Koenig positively acquits syphilis of playing any etiological rôle whatever.—*Medical Review of Reviews.*

THE
ARCHIVES OF PEDIATRICS.
DEVOTED TO THE
DISEASES OF INFANTS AND CHILDREN.
JUNE, 1899.

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ECZEMA IN INFANTS.

It is almost the universal belief of pediatric authorities that eczema in infants and young children is largely of intestinal origin. It seems certain that diet frequently plays an important role in its causation. By this is not meant that any particular article of food causes eczema, but rather that faulty nutrition of the tissues, due to dietary errors, plays a considerable part in the production of the disease. The intestinal indigestion which results from over-feeding is one of the most common causes. The early and excessive use of farinaceous foods or milk containing a high percentage of fat are also undoubted factors in its production. Although the child may be well nourished, careful observation will usually reveal some form of indigestion or dietetic error.

In young children delicacy of the skin is unquestionably a factor of importance in the production of eczema. Causes which would produce but little irritation in the adult frequently cause serious inflammation in the sensitive skin of the child.

The diathetic nature of eczema has been discussed with considerable warmth. While it is doubtful whether the disease can strictly be called a diathetic one, it is certain that it is more common in the children of rheumatic and gouty parents.

In an article appearing not long since in this journal, Dr. Bulkley classifies the internal causes of eczema as (1) dietetic; (2) assimilative; (3) neurotic; and the external as (1) climatic; (2) hygienic. The parasitic theory is strongly urged by some, but it is not yet proved that micro-organisms are the exciting cause of most cases, though they undoubtedly are such in some instances.

Whatever the exciting cause may be, it is certain that the condition somewhat vaguely expressed by the term predisposition is of great importance. The skin of some children becomes eczematous upon the slightest irritation or exposure; in other children the disease can hardly be produced; irritation may result in dermatitis or local inflammation, but not in eczema. Predisposition is an element which must be considered in every case.

In infants, eczema shows but slight tendency to spontaneous cure. It is prone to relapse, and, as a rule, is a prolonged and discouraging disease. When occurring in children suffering from chronic indigestion, it is especially rebellious to treatment, and assurances of speedy cure should be made with great caution.

THE TREATMENT OF ECZEMA.

"It is never dangerous to cure an eczema, and always desirable to do so," says Holt. Basing his opinion upon an experience of 3,201 cases treated personally in private practice, Bulkley says that in over twenty-five years he cannot recall a case where harm resulted from the proper treatment of an infantile or other eczema. The truth of these statements should be accepted once for all, for it is the teaching of every man of experience who has recently written upon the subject.

Three plans of treatment have been advocated by recent writers: Local alone; constitutional alone; local and constitutional combined. Those who advocate local treatment alone are found almost exclusively in the ranks of the dermatologists, not in those

of the pediatrists. The latter believe that the disease is not simply a local disorder of the skin, but requires constitutional treatment, which includes diet, hygiene, and medication.

As to diet, the food and management of the mother or wet-nurse should receive close attention. Particularly should all malt and alcoholic liquors be prohibited. Constipation in the infant should receive particular attention, and every detail of feeding should be scrutinized, it being remembered that many children begin to improve at once upon reducing the fat in the milk. This fact is not contradicted by the other fact that some young patients improve upon the administration of cod-liver oil. It simply demonstrates that no routine practice can be successfully adopted in treating eczema, and indicates that every case must be studied individually and treated on its merits.

It is not within the scope of this article to discuss the details of hygienic, medicinal, and local treatment of eczema, the object being only to emphasize the fact that in young children the disease is closely associated with digestive disturbances and can be managed most successfully by a judicious combination of constitutional and local measures.

THE BACTERIOLOGY OF INFANTILE PNEUMONIA.

In a recent number of the *British Medical Journal*, Dr. James Carmichael in an article upon pneumonia speaks particularly of its etiology and summarizes in an admirable way our knowledge of its bacteriology. He believes with other modern authorities that acute pneumonia, whether in the adult or child, properly belongs to the group of infective diseases, and that it may be produced by a variety of infections is proved beyond dispute. The various micro-organisms during their growth and development give rise to toxæmia, as evidenced by well-marked pyrexial symptoms, which have a more or less sudden onset and termination by crisis or more or less rapid lysis. Not infrequently the constitutional symptoms are out of all proportion to the local lesion in the lung.

The bacteriology of acute pneumonia is especially referred to as disclosed by recent investigations. Valuable information is afforded from the researches of Netter, Durck, Mosny, Meunier, Darier, Grancher, and others, which demonstrate that a number of micro-organisms are met with in this disease. These micro-organisms may be single or multiple whether in the primary or secondary pneumonias. In the primary pneumonias of the fibrinous variety, Friedlaender's coccus or pneumo-bacillus, or Fraenkel's capsuled coccus, are the predominating organisms; the streptococcus or staphylococcus being also found in a minority of cases. In primary catarrhal pneumonias one or other variety of pneumococcus may be found alone, or streptococcus alone, or these two organisms combined.

In the secondary pneumonias of measles, diphtheria, influenza, pertussis, tuberculosis, in addition to the organisms peculiar to these diseases, the streptococcus is frequently met with, more rarely the pneumococcus. Bacteriology thus shows that acute pneumonia is in no sense a specific disease as produced by any special organism.

The author concludes by quoting the words of Grancher, who in his recent treatise says: "The bacteriology of broncho-pneumonia is very complex . . . depending on numerous pathogenous organisms, for whereas fibrinous pneumonia is associated almost invariably with the pneumococcus, catarrhal pneumonia is produced by a variety of infections."

ANTHROPOLOGICAL INVESTIGATIONS UPON CHILDREN.

A very interesting study has recently been made by Dr. Ales Hrdlicka upon 1,000 children, inmates of the New York Juvenile Asylum and the Colored Orphan Asylum. Numerous measurements were taken including the height, sitting height, arm expanse, weight, dimensions of chest and head. The children also underwent thorough inspection and certain other observations employed in anthropological investigations. The

object of the investigations was two-fold: First, to learn as much as possible about the children admitted to the asylums, and, second, to contribute to the general work of the author in his attempt to add to our knowledge of the normal child, and of several classes of children who are, morally or otherwise, abnormal.

Of the 1,000 children examined, 700 were boys and 300 were girls. Of the boys 634 were white and 66 colored. The girls include 274 white and 26 colored children.

In age the white boys ranged from five to seventeen years, the white girls from five to eighteen. The colored boys from six to sixteen, and the colored girls from seven to fifteen years.

Among the 634 white males examined, 58, or a little over 9 per cent., showed no abnormality whatever on any part of their body. Among the 274 white girls examined, there were 35, or almost 13 per cent., on whose body there was nothing atypical. From among the 66 negro boys, 5 or 7.6 per cent., were entirely normal, while out of the 26 colored girls there were 7, or almost 27 per cent., who showed no irregularities.

Thus about one-seventh of all the inmates of the New York Juvenile Asylum are without a blemish on their bodies. This proportion may perhaps seem somewhat small to those who are not accustomed to close examination of either children or adults. Observation of individuals met at large will soon convince one, however, that there are so many irregular ears, teeth, heads, faces, etc., that instead of regarding 14 per cent. as too small a percentage of normality, he will wonder that it is so large.

It will be noticed from the above figures that the girls show a better physical standing in both the white and colored children, and also that the colored boys seem to be physically somewhat inferior to the white ones. As the examination of the boys was somewhat more thorough than that of the girls, the author believes that the percentage of abnormalities between the two are not widely different.

Particular study was made of the origin of the abnormalities in an endeavor to discover which were congenital and which were acquired by habit. In general terms it may be stated that on an average all classes of abnormalities predominate in the male children, both white and colored. This predominance is especially marked in the case of the irregularities acquired by habit.

The white and colored children differ in their abnormalities very remarkably. The white children of both sexes possess on an average a decidedly larger proportion of inborn abnormalities. On the other hand, the negro children acquire in early life a larger percentage of irregularities than the white children. These facts signify that while the white children are more likely to be begotten with physical deficiencies, yet later in life they will not undergo so many pathological processes which give rise to physical abnormalities, as will the negro children. Rachitis seems to be particularly more frequent in the colored.

In studying the evidence presented it would seem that a large number of the lighter congenital abnormalities in no way reflects badly on the individual's history, and does not show any predispositions of the child. Science has been as yet unable to trace to their real causes such atypical characters of irregularities as those of the ears, or those of the toes, or some of those of the teeth, the palate, or the uvula. Experience teaches plentifully that there is but very little or no practical significance in these characters.

Gastric Ulcer in an Infant Two Months Old.—Dr. Cade reports the following rare case (*Rev. Mens. des Maladies de l'Enfance*). The child, two months old, was suffering for four weeks with vomiting and hæmatemesis; finally general peritonitis set in, and the child died; autopsy showed that the peritonitis was due to a perforated round ulcer of the stomach. Basing himself upon this and the other published cases, the author says that ulcus rotundum in infancy has the same anatomical characters as in the adult, and thus in both the hæmorrhages and the perforation-peritonitis are the most dangerous complications.—*Medico-Surgical Bulletin.*

Bibliography.

Vorlesungen über acute Infections-Krankheiten. Im Kindesalter Von Nil Filatow, *Professor der Kinderheilkunde an der kaiserlichen Universität zu Moskau und Director des Chludowschen Kinderspitals. Autorisierte, vom Verfasser ergänzte deutsche Ausgabe. Nach der zweiten russischen Auflage übersetzt von L. Polonsky, Kinderarzt in Schitomir (Russland).* Wein: Verlag von Josef Safar. 1897. pp. vii. 575.

This is an extended and a very complete treatise on the infectious diseases. The author includes not only the more commonly recognized contagious diseases but also epidemic influenza, typhoid fever, glandular fever, and dysentery. There is also a very good section upon vaccination.

While it could hardly be expected that a work upon this subject would contain much that is essentially new, the author has certainly presented all that is known of these diseases at the date of writing. The work is somewhat verbose and contains considerable matter of not essential importance, but it also contains much of great practical value. The work in hand is a German translation from the original Russian, and is, on the whole, an excellent and valuable work which will well repay reading.

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. (*By Over Forty Contributors.* 1899. Seventeenth Year. New York: E. B. Treat & Co., Pp. x., 758. Price, $3.00.)

This excellent annual is so well known that the yearly editions require no extended notice. It can be safely said that the present volume is decidedly better than any which have preceded it. The work has always been liberal in its treatment of orthopedic and pediatric subjects and the present volume does not depart from the usual rule. As usual, diphtheria receives considerable notice, but the space devoted to it is less than in former years. It is quite noticeable that the antitoxin treatment receives but little attention, the inference being that the subject is

becoming so far settled as to create but slight interest. The chief subject of discussion during the past year seems to have been the question of immunizing with antitoxin.

The article on adenoid growths of the pharynx is worthy of particular mention. Chorea, cretinism, and cleft palate receive considerable attention. Infant feeding also receives proper attention, the best papers referred to being those of American writers. The infectious diseases receive this year but short notice, little that is new apparently having been written regarding them. The articles on paralysis deal chiefly with infantile paralysis and the results which follow it, and are unusually good.

Electrolosis in skin diseases is the subject of an extended article in which the cases recently reported in this journal by Dr. Dowd are particularly prominent. The article on "Recent Advances in Skull Surgery" deserves particular mention, as 104 craniectomies are reported in children.

The special article on "Pathogenic Bacteria" is of unusual interest. A new and very valuable feature, also, is the extended article upon "Legal Decisions Affecting American Medical Practitioners."

The review of therapeutic progress for 1898 is written by Dr. Murrell and is a most admirable essay. The dictionary of new remedies is unusually complete and in itself forms a treatise most helpful to the practitioner.

Congenital Hereditary Mitral Stenosis.—Cochez and Crespin (*Sém. Méd.*) reported before the French Congress of Internal Medicine, held at Montpellier, the histories of two families bearing on the question of hereditary mitral stenosis. (1) Mother and her six-year-old child have simple uncomplicated mitral stenosis. (2) Mother and four children, one a boy aged three years, the rest girls aged twenty, fourteen, and twelve. All appear to be strong, except the eldest, who has occasional congestion of the right apex. Other facts support the view of the congenital origin of the affection. Thus the coexistence of congenital malformations with mitral stenosis has been frequently recorded. Cochez himself has treated two patients with simple mitral stenosis for ozæna, which according to many is due to a congenital absence of the inferior turbinate bones; and one, a young man of twenty-six, who besides mitral stenosis had extremities deformed by syndactyly and congenital amputations.—*British Medical Journal.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, April 13, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

CASES OF CRETINISM, TACHYCARDIA, AND BASEDOW'S DISEASE.

DR. CHARLES HERMANN exhibited a number of such cases. The first was a girl of twelve years, who was a dwarf and an idiot. Her parents were healthy, but there had been epilepsy on the paternal side, and one sister was slow in developing, and had an enlarged thyroid. The patient herself was anæmic, and the right lobe of the thyroid was enlarged. She had improved somewhat under thyroid treatment. The next two cases were examples of cretinism that had improved under thyroid. In the third case, that of a girl six years, an enlargement of the thyroid had been first noticed about four months previously. The heart was negative on examination, but the pulse was 108. The next child showed marked tachycardia, with enlargement of the tonsils and thyroid, and adenoids in the pharynx. There was also here an emotional element. The sister also presented a somewhat similar condition. The last case was one of Basedow's disease, occurring in a girl of twelve years, who when five years old had had rheumatism, followed by chorea and mitral insufficiency. Contrary to the general rule, in this case the chorea had preceded the Basedow's disease. The speaker said that, as a rule, in cases of this disease occurring in children the pulse was not so rapid as in adults, and the exophthalmos was either absent or but slightly marked. Basedow's disease was comparatively rare in children, only fifteen cases having been recorded in children under ten years of age, and forty-three cases in those under the age of fifteen years.

DR. CHARLES G. KERLEY said that he had seen three cases of Basedow's disease in children under fifteen years. In one of these cases, a child of twelve years, the pulse had ranged between 140 and 160, the eyes had been very prominent, the goître quite large, and the tremor so great that walking was

impossible without assistance. After receiving 2½ grains of thyroid extract, three times daily for four weeks, she could walk unaided, and at the end of two months she had been restored to her former health. This prompt and strikingly good result was the more remarkable as the child had previously not been benefited by other and approved methods of treatment.

Dr. Louis Faugéres Bishop remarked that while he had seen a great many adult cases of Basedow's disease, he had never met with it in children. As far as the adults were concerned, they were not benefited by thyroid extract.

INTUSSUSCEPTION SUCCESSFULLY TREATED BY A HIGH ENEMA.

Dr. David Bovaird reported for Dr. W. P. Northrup a case of intussusception occurring in an infant of nine months. Within a few hours after the onset of the first symptoms, the sausage-shaped tumor was evident in the abdomen. Under complete chloroform narcosis a high rectal enema of hot water was given, using a pressure represented by an elevation of the reservoir three feet above the patient. At first, there seemed to be no effect from the enema, but suddenly during an expulsive effort the tumor had disappeared, and after this recovery had been rapid. Three months had now elapsed, and there had been no return of the intussusception. Reference was also made to an infant of seven months who had been relieved in a similar manner at the Presbyterian Hospital. Dr. Northrup concluded that it was worth while, in recent cases, to spend a little time in testing the efficacy of this method of treatment before resorting to a radical surgical operation.

Dr. Walter Lester Carr said that if sufficient time were taken in giving the enema, it was possible to introduce a larger quantity of fluid and use less pressure. Immediately after introducing the catheter into the bowel it was unadvisable to use more than a very moderate pressure.

Dr. Henry Koplik remarked that he had recently met with a case in which the bowel had been ruptured by using too much pressure in connection with this method of treating intussusception.

A CASE OF ABSCESS OF THE LUNG FOLLOWING PNEUMONIA; RESECTION OF RIBS; RECOVERY.

Dr. B. Van D. Hedges, of Plainfield, reported this instructive case: The patient, a child of six years, had been first seen

by him on March 20, 1896, having been ill three weeks with pneumonia. His condition at that time was very bad, the pulse being 170, the respirations 65 and the temperature 104.8° F., and the physical signs indicating extensive pleuritic effusion. Exploratory puncture having withdrawn sero-purulent fluid, a portion of the seventh rib had been resected, and about a pint of this fluid removed. At first, there had been improvement, but there were soon unmistakable evidences of the accumulation of pus. On introducing a needle into the seventh space at the axillary line, pus had been withdrawn, and then with the needle as a guide, the abscess had been evacuated by an incision into the lung. By May 18th the wound had completely closed, and after a sojourn for a few months in the mountains, he returned in much better health. At the present time, his physical condition is excellent.

Dr. Koplik said that he had seen two similar cases. In one of these, the surgeon on obtaining a negative result with an exploratory puncture into the pleural cavity had refused to enter the lung. In the other case, he had personally removed about 50 c.c. of pus, and subsequently an abscess of the lung had been detected and drained.

A CASE OF CRESCENT MALARIA IN A CHILD.

Dr. Henry Heiman reported the case of a child of five years, born and bred in this city, in whom he had found a few crescents on microscopical examination of the blood. On administering quinine, the fever had been controlled and the spleen rendered smaller. So far as could be ascertained, this child had spent all its life on the East side of the city. He personally believed that crescent malaria was endemic in New York City, and that it would be detected more frequently if more frequent microscopical examinations of the blood were made.

Dr. Bovaird referred to a case of typhoid fever at the Presbyterian Hospital in which malarial manifestations had suddenly appeared, and microscopical examination of the blood had revealed the crescents. This man had been a resident of the city for years, and there was nothing in his history indicative of prior malarial infection.

Dr. Heiman suggested that this very obstinate variety of malaria should be treated by the intermittent administration of quinine, the interval being sufficiently long to allow of the full

development of the malarial organisms. Such a method would imitate the well-known procedure in the laboratory called "fractional sterilization."

ENLARGED LIVER AND SPLEEN IN INFANCY—A STUDY OF THE ETIOLOGY.

Dr. W. N. Berkeley read a paper on this subject, in which he carefully reviewed the literature, and cited many cases to show how commonly such enlargement of these organs yielded promptly to mercurial treatment, and appeared to be syphilitic in nature. He advised in these cases making a rigid examination of both parents, as well as of the child. If after a study of the history and such an examination the diagnosis still remained obscure, mercurial treatment should be instituted. If decided improvement were observed in three or four weeks, the case should be looked upon as of syphilitic origin.

Dr. Kerley cautioned against too hasty generalizations, in view of the great frequency of hepatic and splenic enlargement from other causes. The former was quite common as an accompaniment of athrepsia. In probably two-thirds of the cases of congenital syphilis that he had seen both the liver and spleen had been enlarged, and as an early symptom it seemed to him of greater importance even than the eruption.

Dr. Bovaird referred to two sisters, thirteen and four years old respectively, in whom there was extreme enlargement of the spleen and liver that had existed for years. They had not responded to treatment for syphilis or lead poisoning, or to the administration of quinine, and moreover, microscopical examination of the blood had been negative. The parents were healthy, and a careful examination had failed to reveal any evidence of syphilis. These common causes of hepatic and splenic enlargement had, therefore, been pretty well excluded in these two instances.

Dr. Vanderpoel Adriance spoke of the very common occurrence of fatty liver in infants, particularly in those who suffered from chronic intestinal disorders. In these cases there was no icterus.

Dr. Koplik said that it was extremely common to find enlargement of the liver and spleen of the infectious variety associated with icterus in infants under one year old. He had records of about a dozen such cases, in none of which had there been any reasonable proof of syphilitic infection.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, March 17, 1899.

A. B. JUDSON, M.D., CHAIRMAN.

LATERAL DEVIATION OF THE SPINE AND PES CAVUS IN FRIEDREICH'S ATAXIA.

DR. W. R. TOWNSEND presented a boy twenty years of age. Since an attack of scarlatina at the age of seven, his nutrition had been very poor. The first signs of ataxia were an unsteady gait and inability to keep from falling if pushed. For the past seven years he had had frequent pain in the knees. Lateral curvature of the spine appeared three years ago and has steadily increased, a long curve to the right extending from the ninth dorsal vertebra downward, with rotation. A plaster of Paris corset had been applied with moderate suspension. There was pes cavus but no equinus. The gait was markedly ataxic. Standing with feet separated and eyes closed there was swaying of the body. The patellar reflexes were lost. Speech was slow. There was nystagmus but no Argyle-Robertson pupil.

DR. J. COLLINS said that it was a clinically typical case. In addition to disease of the posterior columns there was sclerosis of the lateral parts of the cord including the direct cerebellar tracts shown in persistent efforts of the patient to balance himself and producing the peculiar condition, found in every case and heretofore undescribed, aptly named the fork-prong condition of the extensor tendons, the feet being in continual balancing action with the tip of the toes digging into the substance of the floor. The dynamia deformities which later became static were the result of some connate lack of development in the anisotropous muscular substance. The deformity might be explained by postulating the existence of some congenital incapacity of development, some abnormal condition of the proton of the muscular substance. The disease was progressive and usually uniformly so and might extend through half a normal life-time. There was something attractive about the theory that some fibres of the spinal cord might have suffered *death* fifty or sixty years before the normal time, a death without active inflammatory or degenerative changes and akin to that which attended senility. The plaster of Paris corset could have

no influence on the disease, but it had in his experience, contributed to comfort. A potent agent in restoring the function of the muscles was the re-education of the extremities. The patient might be so taught that in a few months he would be able to walk into the room without perceptible disturbance of gait.

Dr. S. Ketch said that the association of nervous disease with lateral curvature was suggestive. Many features of the latter affection could not be explained except by the presence of some prior defect in the nervous system. The case came near being an argument for the neural etiology of lateral curvature.

Dr. H. L. Taylor said that the argument was not convincing. The coincidence of nervous disease could not establish the neuropathic origin of lateral curvature which we saw also in collapse of the lung without rating pulmonary disease as an important etiological factor.

Dr. A. B. Judson said that a nervous origin was not altogether improbable from the observation that the curvature appeared to be due to inability of the muscles to sustain weight while the muscular failure seemed to be the result of faulty innervation.

Dr. Ketch said that in the absence of a demonstrable etiology he would adhere to the opinion that a large number of cases were caused by an antecedent fault in the nervous system.

CONGENITAL DEFORMITY OF THE LOWER EXTREMITY.

Dr. Ketch presented a girl baby two months old with great bone deformity of the right lower extremity. There was shortening and twisting of the upper end of the femur and all the bones were smaller than those of the left leg. The fibula was indistinct, giving only the feeling of cartilaginous hardness. The place of the patella was marked by a slight immovable eminence. There was marked equinus with inversion, the motion of the knee was greatly limited in extension and the spine was slightly deviated to the left in the lower dorsal region. There was dimpling and adhesion of the skin to the outer side of the lower end of the femur. The head had presented in an easy labor with the cord wound around the body so that it held the right foot on the left buttock "so tightly bound there was

no blood in the leg until an hour." The cause of the deformity was evidently retention of the parts in the fœtal position by pressure of the cord, the limb being unable to escape and develop normally.

Dr. Taylor said that the bones were all present but the fibula seemed to be fully developed only at its lower end and the deformity of the foot was not the one usually associated with absent fibula. In these cases some bone was usually lacking or rudimentary.

Dr. V. P. Gibney said that the clear history sufficiently explained the cause of the deformity. He recalled the cause of a child born with dislocation of both hips and both knees, arrest of development being found at the knees and double club-feet of an exaggerated type. The elbows were defective and the movements of the shoulders rather limited. Repeated operations had been required with plaster of Paris retention and as a result the patient had for several years been walking about and going to school without apparatus or any other assistance. He had under observation another child with prenatal amputation of several fingers and double club-foot with arrested tibial development. The fibulæ being very much elongated he had divided them obliquely about two inches above the malleoli and slipped the distal portion up on the proximal, thus bringing the foot into very good position.

CONGENITAL LATERAL CURVATURE OF THE SPINE.

Dr. R. Whitman presented a girl seven years of age whom he had first seen when she was nine months old. She then presented a well marked rotary lateral curvature of the spine that had been noticed by her mother immediately after birth. In spite of the application of braces and manipulation the curvature grew worse rapidly until two years ago when the tilting of the pelvis was so extreme that there appeared to be marked inequality in the length of the legs. The degree of the deformity was seen in a Roentgen picture. Since that time she had been under treatment by irremovable plaster jackets, applied with as much corrective force as could be borne, with most gratifying results. The pelvis became level and the limp had disappeared. The spine had become flexible and its deformity had been in great part corrected. This method of forcible correction and

retention in severe curvatures of this class in young children appeared to offer the best chance of ultimate success.

Dr. G. R. Elliott said that the child's head, shoulders, hips and lower extremities were developed far beyond the thorax as one of the results of two years' encasement. The plaster of Paris jacket is advisable in proper cases but it should be renewed once in three months and should be removed at least weekly to permit breathing exercise and massage.

Dr. R. H. Sayre said that bad effects do not necessarily follow prolonged treatment in the plaster jacket. He recalled the case of a boy affected with rachitic lateral curvature who was unable voluntarily to stand in an upright position. He was kept in solid plaster of Paris for a period of three years. When the jacket was removed, treatment to develop the muscles restored them to as good condition as the muscles of the rest of the body.

Dr. Taylor said that he did not hesitate to immobilize joints and their acting muscles for years if necessary to arrest disease. He had never seen a case in which, after such treatment, the muscles were not developed to the limit imposed by joint motion. It had been demonstrated clinically that when motion was restored to knees anchylosed for many years the muscles assumed their functional activity.

Dr. Ketch said that atrophy of muscles and stiffness of joints caused by the application of plaster of Paris or a brace were of no serious moment and were followed by no ultimate bad effect.

Dr. Elliott believed that permanent injury followed prolonged confinement of children in plaster of Paris forcibly applied. He had a patient under treatment who had been thus treated for seven years and was as a result a hopelessly bed-ridden invalid. It might be an exceptional case, but with a neurasthenic temperament and enfeebled muscles present the injury would extend beyond the possibility of rehabilitation. The muscles might revive but the bones and cartilage of the thorax would be atrophied to the ultimate impairment of the heart and lungs.

Dr. Townsend suggested that the same improvement might have been secured if the jacket had been replaced by a firmly applied corset whose occasional removal would have permitted the employment of massage.

Dr. Whitman said that the child had worn a brace which the mother was instructed to remove and give the child massage, but until the jacket was applied as described the patient grew steadily worse.

THE EFFECTS OF GYMNASTIC EXERCISES IN REMEDYING THE DISPLACEMENT OF THE HEART IN LATERAL CURVATURE.

Dr. T. E. Satterthwaite presented a paper to the effect that the malposition of the thoracic and abdominal viscera which attended well-advanced cases of lateral curvature might be considered as a constant menace to health, and it could be inferred that the thoracic pain of this affection, due in some patients to neurotic conditions, was due in others to the faulty position of the heart which was generally displaced towards the concavity. He presented a patient, a young woman twenty-four years of age, affected with lateral curvature toward the right in the dorsal region of the spine. The pelvis was tilted and the left breast was prominent. When first seen in the Summer of 1898 she was pale, anæmic and short-winded. The heart's action was weak and the apex one inch to the left of the nipple. After three months' treatment with resistant exercises, electricity, gymnastics and massage, the anæmia was corrected, the heart's action was improved and the apex was well to the inner side of the nipple line. Its change in position was traced in diagrams taken successively during the progress of treatment. Two other patients were presented with similar histories and with diagrams showing the migration of the apex during treatment and coincidently with the improvement in the general and local condition of the patient. These patients illustrated in person a long series of appropriate exercises in many of which indicated muscles were called into action by resistance applied by a medical attendant. The exercises were taken by the patient standing erect, leaning against a support, sitting, recumbent, semi-recumbent or suspended by the hands. In the majority of cases there was an advantage in combining force for the reduction of the deformity with some of the prescribed exercises and manual force should be applied without the assistance of mechanical apparatus. Double pressure should be made when practicable, one hand being placed upon the dorsal convexity and the other on the lumbar convexity, each pressing towards the spine. As a rule tonics or nutrients were required; iron, strych-

nine, cod-liver oil and malt extracts. Massage of the muscles of the back was a valuable adjuvant and the Faradic current might be applied successfully during the entire course of the treatment, employed so as to contract actively the muscles of the back. An effort should be made, where practicable, to do away with the spinal brace which should be advocated only as temporary expedient or in cases in which all other measures had failed. By pursuing a more thorough and painstaking course than that commonly in vogue the heart, and with it the lungs, and in time the abdominal viscera might in a measure be restored to their natural position.

DR. SAYRE said that inspection of a preparation of lateral curvature showed that suffering from impeded action of the heart and lungs probably attended cases of well marked deformity. As a rule, however, such patients were not prone to die of disease of the heart or lungs, and, although perhaps somewhat disturbed, they lived to a good old age. He had seen distinct relief of shortness of breath from treatment by exercises and patients in whom the rapidity of the heart-beat had been materially reduced. In one case the pulse rate came down from 120 to 90 when suspended, and 106 when in a plaster of Paris jacket. He had a patient under observation in whom a murmur distinctly audible at some distance and in certain positions of the body, and sounding very much like a tin whistle, had disappeared under the influence of exercises.

DR. SATTERTHWAITE said that the murmur has been probably due to anæmia and a flabby condition of the chambers and ostia of the heart. He did not think that cardiac displacement in these cases gave rise to abnormal sounds, extrinsic or intrinsic.

DR. H. S. STOKES said that he thought it was very difficult to say whether the position of the heart had changed or not. It was the opinion of some observers that the heart could not be accurately mapped out during the life of a normal chest. In a chest deformed by lateral curvature the element of possible error must certainly be a large one. In his observation the result of treatment had been an improvement in the general condition of the child and the prevention of an increase of the deformity rather than an obliteration of the curvature.

DR. SATTERTHWAITE said that while many physicians among the Germans and English rejected methods of mapping out the

heart, in this country observing the heart in this manner was accepted as practicable and important. He believed that it was easy to determine the position of the apex by the impulse and also by the use of the stethoscope.

Dr. J. Teschner said that the heart could not be directly affected to an appreciable extent unless the deformity was so great as to crowd and displace it. He had not mapped out the heart in his cases, but its change of position as the result of treatment by heavy gymnastics had been obvious. In a girl nineteen years of age a very severe rotary lateral curvature of at least ten years' duration was combined with cardiac trouble dating from acute articular rheumatism and peri and endocarditis at the age of four. There was marked hypertrophy and dilatation, a double aortic murmur, a double mitral murmur and a very decided murmur over the pulmonary with the second sound. The murmurs were very widely transmitted. Dyspœna was marked. Slight cyanosis at rest became marked on the slightest exertion. The heart has been growing rapidly weaker, œdema had appeared and her physician believed that she would live only a year or two longer. Beginning with very gentle exercises, in six months she was practicing heavy gymnastics and her physician expressed surprise at her improved condition. He found the heart smaller and changed in its relative position to the chest wall and none of the murmurs except the pre-systolic mitral transmitted to the side and back as before. Dr. Teschner believed that the deformity could be reduced by the voluntary and resisted efforts of the patient and not by external force. Electricity and massage were valueless when compared with voluntary exercise. The more the patient exercised the muscles through the medium of the will the greater would be the benefit. He thought that the exercises described and exhibited fell far short of what was required and that their effect in severe cases would be like that of an infinitesimal dose of a drug whose full physiological effect was desired. He thought that one curve could not be modified without a corresponding effect on the compensating curve. The trouble was not the deflection of a single vertebra, but of several leading to the production of the sigmoid deformity.

Dr. Satterthwaite agreed that the different curves should be considered together as making up the deformity, and added

that in the treatment the muscles should be also considered together as it was impossible to exercise or develop one muscle or group without acting on all the muscles of the region.

Dr. Taylor said that while electricity and massage were good they were not sufficiently good to cure lateral curvature. Reliance should be chiefly on muscular training and suitable apparatus. He would welcome any possible way of dispensing with apparatus which, useful in selected cases, left much to be desired. The hygiene of the patient was of great importance. The physician should regulate the food, schooling, exercise and rest. Piano playing was a pernicious occupation for a patient with a weak back. It should be moderated and usually stopped. One of the things which had held us back in the treatment of this affection was the difficulty in measuring and recording changes which take place. The position of the heart might perhaps in some cases be a useful indication. Measurement of the height from time to time was more easy and likely to furnish more reliable observations.

Dr. Satterthwaite said that he was in the habit of recording the height as a routine matter, but in growing children such measurements might be misleading.

Dr. Ketch said that apparatus was of value in retaining the improvement gained through exercise, which, when properly conducted, produced a good effect on the deformity and indirectly on the condition of the heart, for there was no doubt that the changes in the vertebræ themselves and in the chest walls and the diameter of the thorax gave rise to changes in the viscera. As long as rotation persisted no case of lateral curvature could be said to be really cured. This was always a menace and liable to increase and was the most difficult element to control. The bony changes which followed the muscular changes also made the treatment of lateral curvature very difficult. Curvature depending on simple muscular weakness was the easiest to control, but these were not cases of true rotary lateral disease. Each man should work out his own ideas in regard to the question of exercises, remembering that no form of treatment would be of the slightest value unless it was continued for a long time.

Dr. Satterthwaite agreed that not all cases were suitable for the treatment which he had described. It could not easily

be made successful in the case of out-patients, especially those who lived far away and thus were unavoidably irregular in their attendance. The patients presented were all improving in general condition, the spine was gradually moving forward towards the normal position, while the heart in each had taken an improved position.

Tuberculous Glands of the Neck.—Ernest Laplace (*Journal of the American Medical Association*), remarks that our modern views of infection of any kind point to the necessity of destroying foci of infection, and leads us to the conclusion that the tuberculous glands should be removed at as early a date as possible, provided they have not shown a tendency to subside under the ordinary treatment. Cures have been effected by the injection of an emulsion of iodoform in glycerine or a solution of iodoform and ether, but such instances are rare, and the processes are not free from danger, especially in the case of the deeper glands. At best, even if the process of tuberculosis stopped, a fibrous mass would be the result, retaining in a measure the appearance of a fibrous growth and constituting at any time a perfect cure. The author has always advocated the complete dissection and removal of these tuberculous glands, believing that the sooner such foci of disease are removed the better. The patient can convalesce and regain health under the influence of general tonic and hygienic treatment. The conditions likely to be mistaken for tuberculous adenitis would be malignant lymphoma known as Hodgkin's disease. In this condition there is a general enlargement of the glands around the neck, and possibly in other portions of the body also, for it is a local manifestation of a pseudo-leukemia. Tuberculous adenitis should be differentiated from a lympho-sarcoma and secondary metastatic lymphoma, both of which are malignant and can be recognized as such from the rapidity of their development and invasion of surrounding tissues. Syphilis also manifests itself in the glands of the neck, but the process is slow and would involve a greater number of glands of both sides at the same time. Tuberculous glands, on the contrary, are likely to be limited in number, although they sometimes appear on both sides of the neck simultaneously. The growth is rather slow, but as it develops it appears more and more fixed. It is not necessarily accompanied by great pallor, nor does it give rise to much pain.—*American Journal of Obstetrics.*

Current Literature.

MEDICINE.

Morse, J. L., and Thayer, H. W.: The Frequency of Typhoid Fever in Infancy. (*Boston Medical and Surgical Journal.* Vol. cxxxix., No. 2.)

This investigation was undertaken because of the feeling that typhoid fever might be more frequent than was commonly supposed, notwithstanding the results of certain recent investigations. It was thought possible that on account of the mildness of the symptoms and their resemblance to those of the ordinary gastro-intestinal disturbances of infancy the disease might often be unsuspected or overlooked. The recently discovered method for the diagnosis of typhoid fever, based on the action of the blood of typhoid patients on cultures of the typhoid bacillus—Widal's serum reaction—seemed to offer a means for determining whether these suspicions were well founded or not.

This test was accordingly made in fifty cases during the past summer. The babies were all under two years of age, out-patients at the Infants' Hospital. No attempt was made to pick cases of any especial clinical type or severity, but rather to take cases of all types and of various grades of severity. The clinical diagnoses were:

Simple diarrhœa,	2
Fermental diarrhœa,	45
Ileo-colitis,	3

After studying these cases with great care the authors believe that the following conclusions seem to a certain extent justified:

1. Typhoid fever, as has been commonly believed, is an unusual disease in infancy.

2. It is possible that women whose blood gives a positive Widal reaction, even though it be years after the occurrence of the disease, may in some way transmit this to their infants.

Carmichael, James: Rheumatism in Children. (*Scottish Medical and Surgical Journal.* 1898. Vol. iii., No. 3.)

The author begins with a very positive statement of the fact that the manifestations of rheumatism in the child are often, indeed most frequently, different from those met with in the

adult. In fact, the picture of the disease is often so dissimilar, that, to those unaccustomed to children, it would be hardly recognizable taking the adult type as your guide. As all know, in adults acute rheumatism is essentially a polyarthritis, a febrile complaint of somewhat uncertain duration with sweating and lithate deposits in the urine—conditions that are easily recognizable and which cannot be overlooked.

This brings up another point, namely, the mild and apparently trivial nature of the symptoms and their liability to be overlooked by the parents and even by the doctor. Never forget when dealing with a child suffering from mild febrile symptoms, with a temperature perhaps not over 100°, to bear in mind the possibility of the existence of rheumatism. The importance of an early recognition of the disease cannot be overestimated, as everything, so far as the future welfare and successful treatment of the patient is concerned, may depend on this.

The course of the disease is illustrated by the author by two patients presenting typical symptoms of the disease.

As regards treatment, the author says that the patient must be kept very quiet, and on no account allowed to move from the recumbent posture. Various local applications to the precordia may be tried, such as sinapisms or warm emollient poultices. In many cases the ice-bag seems to give relief, and is worthy of trial. Blisters, in the hands of some practitioners, are extolled, especially when there is much effusion with slow absorption. Internally acetate or citrate of potash will be found of service as diuretics, especially if combined with caffeine, which is useful both for its stimulating and diuretic properties.

Meunier: Leucocytosis in Pertussis. (*Archives de Méd. des Enfants.* Vol. i., No. 4.)

Thirty cases of pertussis were carefully observed, 104 blood examinations being made during the various stages of the disease and during convalescence. A constant and well-marked leucocytosis was present in every uncomplicated case, being so distinctly different in its intensity from the leucocytosis occurring in any other apyretic respiratory affection that it suggested a specific reaction to the pertussis virus. This leucocytosis may appear even before the characteristic whoop develops, reaches its maximum during the apyretic period of the paroxysms, and then gradually diminishes; but does not cease completely until

after the disappearance of the paroxysms. The average number of leucocytes found in a cubic millimetre of blood during the paroxysmal stage is 25,500, although there are frequently more than 40,000.

In children of two and three years old the leucocytosis is more marked than in patients from four to seven; but even in the latter there may be double or treble the normal number of white blood cells present. It is the lymphocytes which are especially increased, although all the varieties of leucocytes are more numerous. The extreme congestion of the tracheo-bronchial lymph nodes probably contributes to the production of the large number of lymphocytes found. The blood examination in pertussis, therefore, has a real diagnostic value, and is useful from a prophylactic standpoint in the case of hospitals and schools.

Soca: Laryngismus Stridulus with Permanent Dyspnœa. (*Archives de Méd. des Enfants.* Vol. i., No. 1.)

The cases reported in this paper are peculiar because of their extremely long duration and almost complete absence of attacks of suffocation. In one the dyspnœa lasted thirty, in another forty-six, and in another nine days, while in a fourth little patient attacks of laryngismus stridulus occurred with great frequency between the ages of two and eight years. Some of these attacks were classical, others lasted six to nine days without any suffocation, but constant supra- and infra-sternal recession. In every case adenoids, croup and enlarged bronchial glands could be excluded, and a diagnosis of laryngismus stridulus positively made because of the repeated attacks, the character of the cough and voice, and the absence of false membrane.

These cases are different from any hitherto reported, and serve to complete the classical description of the disease by Trousseau.

Tirbras: Goitre in Children. (*Archives für Kinderheilkunde.* B. xxv., H. iii., iv.)

The author's observations cover three hundred cases of inherited goître. The great majority of cases occurred in girls. The size of the goître diminished remarkably under a milk diet, but enlarged again as soon as a mixed diet was resumed.

In twenty-seven cases thyroid therapy was given a trial. The capsule and fat was removed from calves raw thyroid, the gland was chopped fine and spread on bread with salt and pepper

added. In this way one or two glands weighing from six to twelve grammes were given daily. In other cases powdered thyroid was given. The diminution in size of the tumor in many of those fed on the raw thyroid was considerable. The powder appeared to produce less favorable results, and a slight diminution in size of the tumor was noted only after weeks of handling. Symptoms of intoxication were not noticed. Occasionally there was loss of appetite. Loss in weight was only temporary and of no consequence.

Rey: Pathology and Etiology of Night Terrors. (*Archives für Kinderheilkunde.* B. xxv., H. iii., iv.)

The author's observations cover thirty-two cases, in all of which adenoids were found in the naso-pharyngeal vault. The adenoids were removed and the night terrors subsided. The author believes that adenoids are the most frequent cause of this trouble, producing a carbonic acid poisoning through the interference with the respiration. The author has not seen a case of the so-called idiopathic night terror.

Kassowitz: Tetany and Auto-Intoxication in Children. (*Archives für Kinderheilkunde.* B. xxv., H. iii., iv.)

The author vigorously combats the theory that tetany is due to toxic influences, particularly from absorption of toxines from the intestinal tract. About sixteen thousand children come yearly under his observation, and he finds that fewer cases of tetany present during the summer than at any other portion of the year.

The cases appear with the beginning of cold weather, and increase until April, when the highest point is reached. A case of tetany is rarely seen at this clinic during the summer months. There is a very close association between this disease and rachitis. The months which furnish the most cases of rachitis, furnish comparatively the largest number of cases of tetany. It is extremely rare for a case of tetany to be seen in a child other than one who has rachitis in a very active stage.

The association of tetany and rachitis is explained as follows: In the growing child there is an inflammatory condition of the growing portion of the bones, a hyperæmia with marked dilatation of the blood vessels. This hyperæmia is particularly noticeable in the bones of the skull, the tetany being due to cortical irritation caused by the proximity of the local inflammatory process.

Martin, T. C.: The Difficulties of Defæcation in Infants. (*Gaillard's Medical Journal.* 1898. Vol. lxix., No. 5. *New York Medical Journal.* Vol. lxviii., No. 19.)

It is generally recognized as a fact that infants and young children strain at stool. The infant and young child strain violently at expulsion of semisolid fæces because of the imperfect development of the anatomic features concerned in the mechanism of defæcation. These are:

1. The infant's lower gut is muscularly deficient.

2. Its mobility within the abdomen is obstructive to defæcation.

3. The rectal valves are obstructive.

4. The infant's anus, not being sufficiently expansible, is also obstructive to defæcation. Records of *post-mortem* observations were read and specimens of rectums exhibited which proved that:

1. The muscular development of the adult rectum and lower sigmoid is plainly apparent, and a deficient muscularity is observable in the infant specimens. In the infant gut the intrinsic power of peristalsis is not present in that degree necessary to it as a component expulsory factor.

2. The mesoperitoneum of these parts in the adult is, relatively, considerably shorter than that in the infant. The adult gut is slightly tortuous; that of the infant is much angulated. Mobility and angulation of the infant gut conspire to obstruct the passage of formed fæces.

3. The rectal valve appears to bear the same proportion to the gut in both adult and infant, but when the difference in muscular development in the two is noticed, the disproportionate great resistance of the valve in the infant rectum becomes an obvious fact.

4. The anal expansibility is adequate in the adult, but because of the greatly contracted bony pelvic outlet it is deficient in the infant, and constitutes an obstinate obstruction to the passage of semisolid fæces.

Correlative to these facts, it must be recognized that the adult rectum has resident within its own wall a powerful expulsive muscular mechanism; that in the adult the shortening of the mesentery holds the upper rectum steady under the applied auxiliary forces; that in the adult the flexures of the sigmoid are not necessarily obstructive, though in a desirable measure

retardative; that in the adult the incline of the lower sacrum and coccyx behind, and the development of the uterus and prostate and their inherent supports in front, provide the lower rectum with a firm funnel-like arrangement which guides the fæces directly upon the os internum of the anus; that the rectal valves may divide the fæces into portions to facilitate their separate successive discharge, and finally, in sequence, that the physiological descent of the entire pelvic floor reduces this last possible resistance to the minimum in adult defæcation.

Infantile straining, the ruptures and prolapses, constipation, retention of fæces, and the multitudinous consequent ills demand study, and this investigation forces the conclusion that the individual's escape is ultimately assured by the process of development, but that, for the normally formed infant, the physician will find the solution of the problem of difficult defæcation in the liquefaction of the fæces.

Turner, A. Logan: Tubercular Tonsils and Adenoids as the Etiology of Enlarged Cervical Lymph Glands. (*Progressive Medicine.* 1899. Vol. i.)

One of the most interesting and difficult problems for specialists in children's diseases, which has been well called the specialty of the general practitioner, has been the etiology of enlarged cervical glands. The tonsils have long been suspected as one of the points of entrance for the infection. The review of the recent literature of the subject shows that not only has the role of the tonsils in this matter been made clear, but that it now seems certain from the investigation by a number of observers, that the adenoid and faucial tonsillar tissues at the upper part of the pharynx are quite often the seat of chronic tuberculous processes.

Dieulafoy, the distinguished French clinician of the Hotel Dieu, Paris, could demonstrate the presence of tuberculous tissue, histologically in excised adenoids in only about six per cent. of the cases, but the much more delicate biological test of injecting portions of the excised tissues into guinea pigs gave positive results by the death of the animals from tuberculosis in 20 per cent. of the cases. These biological results, Dieulafoy considers as suggesting the true conclusions to be drawn. A number of other observers confirm these results, and it adds to the weight of the confirmation to know that there have been no national

lines in the matter. Investigators in England, in various parts of Germany, in Russia, and in Austria, have come to practically the same conclusions as to the frequency of tubercle in these tissues.

How important these observations are for prophylaxis is evident at once. We have long known that when these tonsillar adenoid tissues were enlarged they should not, for certain physical and mechanical obstructive reasons, be allowed to remain, but there is now added the realization of the danger that tissues of such low vital resistance to the invasion of bacteria may frequently, owing to the presence of an abundant pathogenic flora in the mouth, become the ports of entrance for serious disease.

These considerations will better enable us to convince parents, too, of the necessity for the removal of these enlargements before they have become infected, or at least before they have passed the infection on along the lymph paths. The whole of this subject is in the line of the best advances in present-day medicine, and is especially important because of its intimate connection with prophylaxis in early years, of tubercular processes, against which, until now, our hands have been practically tied.

Head, George, H.: Estimation of the Leucocytes of the Blood as an Aid in the Diagnosis of Diseases of Children. (*Northwestern Lancet.* 1899. Vol. xix., No. 434.)

After a prolonged study of this subject as applied to various diseases the author believes that in the diagnosis of typhoid fever in children a leucocyte count is of great value. The disease is so atypical in its onset, many of the cases are not seen until the child has been sick for five or six days, the symptoms are so notoriously uncertain that the diagnostician is often in doubt until the disease is well advanced or the *post-mortem* reveals the true lesion. In the first week of typhoid fever the leucocyte count is normal or below normal, in the second week it is almost always below normal, as is likewise the case in the third and often the fourth weeks.

In the differential diagnosis between typhoid fever and la grippe this fact is of no value since both diseases have a similar white blood count, but in the diagnosis between typhoid fever and appendicitis, or typhoid fever and osteomyelitis, or typhoid fever and enterocolitis, and the infectious diarrhœas or typhoid

fever and pyæmia or septicæmia, this leucocyte count would be almost of diagnostic value.

If in a case of protracted fever of doubtful diagnosis in a child the writer should be asked to take his choice between making a leucocyte count and the Widal reaction, he would unhesitatingly choose the former. The Widal reaction tells whether the case is or is not typhoid fever. If it is not typhoid fever this test leaves the clinician entirely in the dark as to what it may be. The leucocyte count does not give information which enables one to say absolutely that the case is typhoid fever, but it does help the diagnostician to say with some certainty whether the case is appendicitis or typhoid fever, whether it is pyæmia or typhoid fever, whether it is meningitis or typhoid fever, whether it is osteomyelitis or typhoid fever, whether it is infectious diarrhœa or typhoid fever, since all these conditions usually exhibit leucocytosis while typhoid fever does not.

But we are not compelled to make a choice. We have both the Widal reaction and the leucocyte count as aids in the interpretation of obscure pathological conditions.

In lobar pneumonia a leucocyte count is of assistance in diagnosis. Lobar pneumonia is a disease generally characterized by a very large leucocytosis. Only the cases of the very mildest infection or some of those which terminate in death exhibit no increased white count. In children the early diagnosis of pneumonia is not always easy. In the first place the initial symptoms are many times atypical, the complaint of the child may be of pain in the abdomen rather than in the chest, there may be little or no cough and little or no expectoration. It is in these cases that a small area in the base of one lung may be entirely overlooked and the attention of the clinician directed to some other organ of the body. Under such conditions a leucocyte count is of great value, since a high leucocyte count in a child with high fever is always suggestive of pneumonia. Also in grave cases of the disease a leucocyte count gives some indication as to the outcome. Grave pneumonias without leucocytosis almost invariably die.

Tuberculosis in most of its forms is unattended with an increased leucocyte count. Pulmonary tuberculosis is an exception to this rule and usually exhibits a leucocytosis except in its initial stages, probably because there is already a mixed infection

when the case comes under the care of the clinician. As a means of differentiating between tubercular and septic peritonitis the white count is of value as also between tubercular and septic meningitis. There are, however, some observers who dispute the latter statement.

In meningitis, other than the tubercular form, a leucocytosis usually exists. In Cabot's series of cases two were in children and both gave a leucocyte count of over 14,000 corpuscles to the c.m.m. In the differential diagnosis between meningitis and typhoid fever with meningeal symptoms, the white count is of great value.

In osteomyelitis in children a leucocytosis usually exists. The writer has notes of a case in a girl of five years where for some days doubt existed as to whether the case was osteomyelitis or typhoid fever. A white blood count would have removed the doubt and guided the diagnostician to a right conclusion.

Of the acute exanthemata measles has no leucocytosis while scarlet fever exhibits a count of from 17-30,000 white cells to the c.m.m. Of the other diseases met with in children, diphtheria, tonsillitis and acute articular rheumatism cause an increase in the number of leucocytes in the blood, while la grippe presents a normal or diminished leucocyte count.

Kennan, Richard H.: Relapse in Scarlet Fever. (*The Dublin Journal of Medical Science.* 1898. No. 324.)

The subject of relapse (so-called) in scarlet fever has excited very considerable attention during recent years. More particularly has it come under the notice of those who are engaged in large isolation hospitals.

One is struck, in looking up the literature of scarlatina, by the fact that the text-books of even recent publication contain little or no reference to its occurrence. Indeed, they are fairly unanimous in the opinion that a relapse, or second attack, of scarlatina is to be ranked amongst the very exceptional experiences in medical life, and that when it does occur it is invariably after some years have elapsed since the first attack. But second attacks taking place so soon after the first as to be actually called relapses were not seen apparently till recent years. It is not reasonable to suppose that such an occurrence, evident as it now is, could have been long overlooked by the many careful

observers who had been attracted by the very interesting study of scarlatina. Nor is it probable that the character or life history of this fever is very appreciably changed. It seems as if the practice, which has grown up with the modern developments of public health administration, of isolation of dangerous infectious disease in large hospitals, is directly responsible for it. This may require a word of explanation. In private, and in all cases before isolation on a large scale as at present carried out was thought of, each patient was subjected to an ever-diminishing intensity of infection. He was himself daily becoming a lessened source of danger to others, and also to himself.

In a hospital ward, however, in which the atmosphere and contents are kept, by the constant introduction of acute cases, charged with infective material, this diminution or attenuation is not obtained. The patient whose attack has left him with but slight protective power may fall a victim to a second attack. Of course it is not to be understood that this is by any means a common occurrence, but more on this point presently.

To obviate this risk, it has been suggested to keep certain wards set apart for the reception of acute cases, others to which these cases will be transferred when becoming convalescent, and others again in which convalescents will be placed for some time prior to their discharge from hospital.

Some authorities regard the tonsillar and faucial inflammation and ulceration, so frequently seen in patients in fever hospitals late in the period of their convalescence, as abortive second attacks, as well as those cases with faint scarlatiniform rash with or without elevation of temperature, and but slight, if any, constitutional symptoms during convalescence.

During the time the author was resident medical officer, three cases of undoubted so-called relapse were noted, but the total numbers, unlike those in the Metropolitan Asylums' Board records, were quite insufficient for statistical purposes. They all recovered, and they were all cases in which the first attack was slight though typical in all features.

Wachenheim, F. L.: The Clinical Relations of the Löeffler Bacillus. (*New York Medical Journal.* 1898. Vol. xvii., No. 24. *Medical Chronicle.* Vol. ix., No. 5.)

Bretonneau claimed a common origin for croup and malignant angina, declaring them due to the same infecting agents, necrotic changes being due to secondary influences. Virchow

distinguished "diphtheritic inflammation" from "croupous inflammation," necrosis of the underlying tissues accompanying the first and being absent in the second.

The author, excluding chronic tonsillitis and suppurative tonsillitis, gives the following classification of tonsillar inflammations:

(1) Catarrhal angina, marked by simple hyperæmia and increased succulence.

(2) In addition to the inflammation as above, there are white dots about the size of a pin's head in the lacunæ.

(3) The spots are larger and spread over the surface of the gland with a tendency to coalesce.

2 and 3 form the follicular angina group.

(4) The coalescence of the patches in the third form makes the fourth group.

(5) The fifth is Virchow's diphtheritic angina, and includes so-called gangrenous tonsillitis.

Löeffler, Escherich, Kossel, and Baginsky found the bacillus in 92 to 97 per cent. of primary diphtherias.

Whether the pseudo-Löeffler bacillus is an attenuated Löeffler or a distinct form is still *sub judice.*

There is little doubt about the infectiousness of streptococcus cases. Bernheim, Roux, and Yersin have proved the high virulence of mixed Löeffler bacillus and streptococcus infection.

Koplik found Löeffler bacilli in many cases of punctate and most cases of disseminated croupous angina.

The bacillus has been found in many normal fauces. It has been shown also to be the cause of fibrinous rhinitis.

The bacillus was found by Belfonti to persist in certain cases in convalescence even as long as seven months. The germ persists longer where there is chronic inflammation of the air passages. Out of 16 cases collected in the past year by the author, the Löeffler bacillus was found in 10. He mentions 9 of the 16 cases.

Of 14 cases of lacunar and catarrhal angina only one presented the bacilli. This case escaped further observation.

The author, guided by the following considerations—the delay necessary for the preparation of cultures and the fallacies associated with the recognition of the germ under the microscope alone, the unreasonableness of isolating healthy people in whose throats is found the bacillus, and the reasonableness of

isolating cases of streptococcus infection—concludes that our diagnostic procedure is practically restricted to that of Bretonneau; that bacteriological results are at the best only confirmatory, and that we must manage our cases from the outset from a purely clinical standpoint. Sero-therapy should at once be used without waiting for a bacteriological report, as delay is harmful. In strictly lacunar tonsillitis it will probably not be called for in any case.

Symes, Langford: On Thrush. (*Medical Press.* 1898. No. 9. *International Medical Magazine.* Vol. vii., No. 12.)

The author alleges that in the decade ending with 1896 there died in Ireland 218 children under five years of age from this disease. It is known to be the result of a fungus or vegetable parasite, but of exactly what species has not yet been certainly determined. Its growth is favored by an acid medium, and it most easily attacks weakly infants with unclean mouths. Thrush is a common cause of excoriation of the nates. The author describes at length the familiar symptoms, and for treatment advises wiping off with a dry rag the specks of fungus, and applying a glycerite of borax or of weak carbolic acid or some other antiseptic. Strict cleanliness as regards the child's mouth, feeding bottle, etc., are recommended for fermentation in the stomach and intestines. The author particularly condemns the admixture of honey with the antiseptic applied to the mouth on account of the readiness with which it ferments and thus aggravates the difficulty.

Cassonte: Typhoid Fever in a Child of Two Months. (*Journ. de Clin. et de Therap. Inf.* 1898. *The Edinburgh Medical Journal.* 1898. Vol. v., No. 1.)

A child, aged two months, was admitted to hospital with somewhat indefinite symptoms, characterized by diarrhœa, collapse, and subnormal temperature, which were attributed to the improper feeding to which the infant had been subjected. Owing to the occurrence of an epidemic of typhoid fever in the district, the serum diagnosis was employed, with the result that at the end of half an hour the characteristic reaction was obtained. The following day the infant died, and at the *post-mortem* examination fourteen Peyer's patches were found infiltrated, several of which had commenced to undergo ulceration. M. Cassonte draws attention to the uncertain nature of the

symptoms of typhoid fever in children. In the case specified, the absence of any rise of temperature seemed rather to exclude the diagnosis of typhoid; and of all the usual symptoms of this disease, the only one present was persistent diarrhœa. He considers that many cases of typhoid are not diagnosed in infants, and he believes, if all doubtful cases of diarrhœa were submitted to the serum diagnosis, it would be found to be more frequently present than is generally supposed, for there seems to be no good reason why infants, who are so liable to gastro-intestinal infection, should be less liable to the ravages of the typhoid bacillus than older persons.

Jacobi, A.: Rhachitis. (*Philadelphia Medical Journal.* 1898. Vol. ii., No. 26.)

Rhachitis has a tendency to get well; that is, under favorable circumstances the softened bones grow hard. Moderate curvatures disappear, or nearly so, after years, and the flabby muscles become strong and active. Should we let it alone, and not employ air, and proper food, and cold water, and phosphorus, and iron iodid, and cod-liver oil in mild as in bad cases? What we have to expect, or to fear, in every case of rhachitis, are stunted growth, deformities of the extremities, the trunk, and pressure by the chest-wall on the chest; and secondary hypertrophy of the heart, subacute and chronic bronchial catarrh, with broncho-pneumonia and the possibility of tuberculosis; laryngismus stridulus, with possibly sudden death; hydrocephalus and imbecility or idiocy. These serious consequences of rhachitis may be prevented by treatment. The hyperæmia of the rhachitical skull and brain tends to physiologic irritation and growth; not infrequently, formerly the rhachitic children were the best scholars, and amongst the geniuses of history there are many rhachitic heads. But, if the physiologic hyperæmia is permitted to become pathologic, the result is meningitic effusion and insufficient or faulty growth. To treat rhachitis in time means to add beauty and brightness and intellectuality to the world.

Thomson, John: Note on the Tendency in Some Syphilitic Families for Certain Organs and Tissues to be Specially Affected. (*Scottish Med. and Surg. Journal.* 1899. Vol. iv., No. 1.)

During the last ten years the author has had under observation various members of a syphilitic family in whom lesions,

presumably syphilitic, have been found in the fundus oculi in no fewer than four instances, while such tissues as the teeth and corneæ have not been typically affected. During the same period he has attended four infants of another family, three of whom have had multiple epiphysitis of obviously syphilitic origin.

The continued observation of two such series could not but suggest the question whether there was not a tendency for congenital syphilis, when occurring in several members of a family, to affect the same tissues. The field for the investigation of such a question is necessarily an *exceedingly* limited one, because it is rare in any family for as many as three or four children who have had syphilitic manifestations in infancy to attain even to early childhood, and, fortunately, those who do survive the period of snuffles and rash often show no further indication of the disease during life. It is not very uncommon to find a history of repeated miscarriages or of a succession of still-born infants; but, in the great majority of cases, after one or two syphilitic children have been born, the rest of the family show no trace of morbid inheritance. It seems as if the congenital syphilitic taint has such a strong tendency to lessen with each successive child that, when one member of a family succeeds in surviving its effects in infancy and attaining a fair measure of strength, there is a reasonable probability that the next one may be free from the disease altogether.

A search through the literature of the subject has not supplied any facts bearing on the question; and an inquiry into the family histories of ninety-three congenital syphilitic cases recorded in his own note-books has not revealed much more.

Kœppen, A.: The Symptom of Bolognini in Measles. (*Centralblatt f. innere Medicin.* 1898. No. 26. *American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 2.)

The author refers to a symptom described some years ago by Bolognini as existing in measles. This consisted in a peculiar sensation of friction, felt when gently rubbing the tips of the fingers over the surface of the abdomen with gradually increasing force. This phenomenon, which, according to Bolognini, could be felt from the prodromal period well on to the end of the disease, was considered to be due to a morbillous eruption upon the peritoneum, and he considered that it offered a diagnostic sign of measles.

Recently Kœppen had opportunity to control these observations in the course of an epidemic of the disease, during which he specially examined 316 children, several of them on more than one occasion. The symptom of Bolognini was observed in only 154 of these patients. Moreover, the author has been able to convince himself that the phenomenon consists not in a sensation of friction (frottement), but rather in a fine crepitation which recalls that given by subcutaneous emphysema, and seems to be due to the presence of bubbles of gas in the intestines. Indeed, most of the children in whom Kœppen found this symptom were suffering from diarrhœa with foamy stools.

Finally, the author has observed the existence of this symptom, though to a less marked degree than in measles, with children suffering from digestive troubles and who were free from measles. With healthy subjects he has never observed the phenomenon.

It follows from these later observations that the symptom observed by Bolognini, while very frequent in measles, cannot be considered as a pathognomonic sign of this affection.

Stieglitz, Leopold: Multiple Sclerosis in Children. (*American Journal of the Medical Sciences.* 1898. Vol. cxv., No. 2.)

The first case of disseminated sclerosis occurring in a child was published by Schuele in 1871. It is, at the same time, one of the three cases of the kind in which an autopsy confirmed the clinical diagnosis. Schuele's case was followed by the publication of a number of English observations (Dreschfeld, Pollard, Bristowe, etc.), and in 1879 by the report of two cases from Erb's clinic by Ten Cate Hoedemaker. In 1883 Marie wrote a paper on the subject, collecting in all thirteen cases from literature and adding a case. Unger, in Vienna, published in 1887 an elaborate monograph upon the occurrence of multiple sclerosis in children, and increased Marie's list of cases to nineteen, one of them a case of his own observation. A number of publications reporting one or two cases of the kind followed in the German, French and English medical journals. In 1893 Totzke, a pupil of Mendel, in Berlin, published two new cases in a dissertation, and reviewed all the cases published after the appearance of Unger's monograph, tabulating thirty-nine cases up to date. In this country Pritchard wrote a chapter on multiple sclerosis in Keating's "Encyclopædia of the Diseases of Children,"

and Sachs devotes a chapter to the disease in his book on "The Nervous Diseases of Children," bringing the subject up to current times.

Having had the good fortune to observe at the Mount Sinai Hospital Dispensary and in private practice three cases of the disease in children during the past year, the author was led to inquire into the frequency of its occurrence at this age and to study the special literature on the subject. This study has forced the conviction upon his mind that the diagnosis of multiple sclerosis in a number of the cases published as such could be fairly challenged, and that the various statistical tables include cases which should properly be classified under other headings.

Naturally the differential diagnosis of multiple sclerosis in childhood must follow somewhat different lines than those laid down for the same disease in the adult. The following diseases may have to be considered in the presence of a given case:

1. Infantile cerebral palsy.
2. Syphilis of the cerebro-spinal axis.
3. Hereditary spinal ataxy (Friedreich).
4. Hereditary cerebellar ataxy (Marie).
5. Acute disseminated myelitis (Leyden).
6. Tumor of the brain.
7. Hysteria.

1. Increased myotatic irritability, spastic paralysis, and rigidity, representing various degrees of one and the same morbid condition, confined to the legs or involving all four limbs; mental impairment; partial or complete hemiplegia and strabismus are conditions common to both multiple sclerosis and the infantile cerebral palsies. Intention tremor, the nystagmus, and the bradylalia—are occasionally observed in cases bearing all the marks of a cerebral diplegia. It is true it is comparatively rare that we find more than one of these three symptoms present in a case of this kind, and there is no instance on record in which all three were observed. Nevertheless, if they occur singly or two at a time, there is no reason why they should not occasionally be seen simultaneously; nor are the cases of multiple sclerosis common in which this symptom-triad is complete. Of the thirty-five cases reported in children the author finds but nine cases in which intention tremor, nystagmus, and bradylalia were noted. The many points in common between the two morbid conditions indicate the difficulties that may be encountered in attempting the differential diagnosis; and these diffi-

culties are enhanced by a common etiology, both occurring after the acute infectious diseases. Infantile cerebral palsy is either congenital or a disease of acute onset; in the congenital or birth-palsies a history of difficult labor, instrumental delivery, or premature birth is of great diagnostic weight. Such a history should make us exceedingly chary of making the diagnosis of multiple sclerosis in early childhood. In these cases there may be an apparent development of the symptoms as the child grows older and the disorders of motion and speech and the mental impairment become manifest. In the acquired forms of the disease, in which acute infectious diseases, endocarditis, and convulsions are the main etiological factors, the symptoms produced by the acute lesion make their appearance immediately, and there is little or no further development; on the contrary, there may be some retrogression in the symptoms, very much as in the cerebral palsies of adult life.

2. The author does not discuss at length the differential diagnosis between multiple cerebro-spinal syphilis and disseminated sclerosis. That is a chapter in itself. Suffice it to say that the same considerations which enter into play in adults hold good in the young. In the latter we are apt to find valuable evidence in the presence of the ordinary signs of hereditary syphilis.

3. Hereditary spinal ataxy shares with disseminated sclerosis a number of important symptoms—the nystagmus, the disturbance of speech, and an ataxic tremor of the extremities, which bears a certain though remote resemblance to an intention tremor. In the various articles on disseminated sclerosis in children the differential diagnosis between this disease and Friedreich's ataxy is entered into very fully. It is rarely difficult to differentiate between the two in practice. The main differences may be summed up as follows:

Friedreich's Disease.	*Multiple Sclerosis.*
Knee-jerks lost or diminished.	Exaggerated.
Eyes, pupils and fundus normal; ocular nerve palsies very rare.	Pupils frequently unequal, reflexes may be lost; discoloration of the optic disks; amblyopia; ocular nerve palsies common.
Speech halting and explosive, blurting.	Laborious, monotonous, and scanning.

Proof of heredity would be of little diagnostic value, as multiple sclerosis has been observed in more than one member of a family.

4. According to Marie, who first classified the atypical cases of hereditary ataxy, and gives them the name of "hereditary cerebellar ataxy," to distinguish them from Friedreich's disease, a distinctive feature of this type is its onset after the age of puberty.

On account of the close similarity in the symptoms of the two conditions, the differential diagnosis in a given case may be very difficult or even impossible. In one of the author's cases the gait corresponded very well to that of hereditary cerebellar ataxy. It was ataxic, there was a tendency to reel, and there was some rigidity of the legs present. The increased knee-jerks, the optic atrophy, the amblyopia, and the jerky nystagmus all fitted well into this clinical type. The features which allowed the diagnosis to be made in favor of multiple sclerosis were (1) the history of a previous ptosis which disappeared under treatment; a temporary ocular nerve palsy is very characteristic of disseminated sclerosis. (2) The paresis of the internal rectus muscle. (3) The presence of the Romberg symptom, which is said not to occur in hereditary cerebellar ataxy. (4) As supporting factors, the weakness of the sphincter of the bladder and the age on onset.

The absence of heredity is of no diagnostic value, as a number of isolated cases of hereditary cerebellar ataxy have been published. Some of them, it is true, may turn out to be cases of multiple sclerosis upon autopsy.

5. In certain cases of acute disseminated myelitis and encephalomyelitis following the acute infectious diseases the symptoms of an acute or sub-acute multiple sclerosis are presented, more especially the intention tremor, the increased reflexes, and the scanning speech. The disease may ultimately form the basis of a typical chronic insular sclerosis, with its recurrent attacks, etc. It may, however—and that is a point of importance—subside after a longer or shorter period and end in recovery.

6. Tumor of the brain. In an instructive paper in the *Charité Annalen*, Westphal describes a case which he had published a year previously as a case of multiple sclerosis in a child, and in which the subsequent autopsy had revealed a tumor of the left optic thalamus. Gowers states that he has seen typical intention tremor in cases of tubercle in the crus and in the pons, and expresses the suspicion that in some of the cases published

as examples of disseminated sclerosis in childhood there may really have been a stationary tubercle of the brain. An error of this kind will be avoided if other symptoms of brain tumor are looked for and found. In the second case the possibility of the presence of a brain tumor was considered; the ptosis some years previous to the development of the other symptoms and the vesical weakness militate against such a diagnosis. Nor was there any history of headache, nausea, or any other general cerebral symptoms. A brain tumor giving rise to a cerebellar ataxic gait would be looked for in the cerebellum or at least in the posterior fossa—a location in which the general symptoms are, as a rule, early and intense.

7. Concerning the exclusion of hysteria, it may be briefly stated that the presence of ankle-clonus, of nystagmus (unless congenital), or of optic atrophy excludes it at once. A case of hysteria simulating multiple sclerosis will show indisputable hysterical stigmata if they are only looked for. It may occur, however, that hysteria may complicate the organic disease, which actually happened in one of Bruns' cases, in a girl of fifteen years.

Henke: The Experimental Production of Diphtheria in Animals by the Loeffler Diphtheria Bacillus. (*Arbeit. d. path. Inst. zu Tübingen.* Bd., ii., Hft., iii. The Post-Graduate, 1899. Vol. xiv., No. 4.)

The following conclusions were drawn by the author from results of experiments undertaken by him:

1. The inoculation of the Loeffler diphtheria bacillus upon mucous membranes and organs of the throat does not produce an affection absolutely identical with human diphtheria. The progressive character is wanting in the artificial process, and a spontaneous extension to the trachea or *vice versa* is not observed in animal experimentation.

2. Consequently, unquestionable proof of the etiological significance of the Loeffler bacillus can not be drawn from the results of animal experimentation.

3. However, after slight lesions of the mucous membranes a pseudo-membranous process, which possesses a limited degree of progression and is very similar to the diphtheritic process in the trachea of man, can be produced in animals, especially in the trachea.

4. Also, histologically there exists an almost complete correspondence of both processes, and in some instances the inoculated bacilli are arranged in the same characteristic manner as in man.

5. The process produced upon the mucous membranes of experiment animals by diphtheria bacilli exactly corresponds in its degree and character to that which can be produced in animals by inoculation of the whole membrane.

6. With other bacteria, especially such as, besides the Loeffler bacillus, are found in the human membranes, no (strepto- and staphylococci), or but a very incomplete and slight (bac. coli.) pseudo-membranous formation can be produced in the trachea of animals. Still, considering the observations of others, the process called forth by the Loeffler bacillus cannot be looked upon as an absolutely specific one.

7. The results of experiments with the Loeffler diphtheria bacillus speak in favor of the etiological significance of this micro-organism in human diphtheria.

8. The non-uniform results of tracheal inoculations handicap the employment of experimental diphtheria for the extensive testing of Behring's diphtheria antitoxin in animals.

HYGIENE AND THERAPEUTICS.

Ashby, Henry: The Value of Milk Whey in Infant Feeding. (*Edinburgh Medical Journal.* 1899. Vol. xlvii., No. 526.)

The author believes that the value of whey is often forgotten in making up the food of infants. He regards it as a valuable adjunct in infants who are sick or have weak digestions.

The composition of whey according to Koenig is as follows: Proteid, 0.85; fat, 0.23; lactose, 4.71; salts, 0.65; water, 93.24.

But when whey is required as a food, it is clearly desirable that at least some of the fat should be retained in the whey, and not be rejected with the curd. This may be effected by a thorough agitation of the curd before straining. Perhaps the most ready way of preparing whey for infant feeding is to use Hawksley's sterilizing apparatus, as it is provided with a thermometer, and consequently the temperature can be regulated. Thirty ounces of good fresh milk are placed in the bottle provided, and the heat raised to 104° F.; add two teaspoonfuls of essence of rennet, and set aside for a few minutes. When curdling

has taken place, thoroughly break up the curd by stirring and shaking the bottle; then strain through fine muslin or a colander.

In this way twenty-two or twenty-three ounces of an opalescent fluid is obtained, which should be heated to 160° F. for twenty minutes, in order to destroy the rennin. It may require a further straining, as more curd is apt to form on heating. Analyses of whey prepared in this way showed on an average that the whey contained—proteids, .97; fat, 2; salts, 6.1 per cent.; the amount of fat being much larger than in whey prepared by simply draining the whey off the curd without agitation. Centrifuging, in Gerber's acid butyrometer, the whey prepared in the wards of the Children's Hospital, the author found an average of 1.75 to 2 per cent. of fat.

Whey prepared in this way, with or without an addition of two or three drachms of milk-sugar to the pint, makes a useful food for newly born infants who have to be artificially fed, or for infants who suffer from chronic vomiting, or have liquid, green, and curdy stools. They will gain weight and be more comfortable than when taking diluted milk.

It is always well to add a grain or two of bicarbonate of soda, to render the mixtures neutral or slightly alkaline.

It is often convenient to give dyspeptic infants whey at first, or even dilute the whey with a solution of maltose or barley-water, as such infants cannot always digest as much as 2 per cent. of fat in their food. As they improve, add milk to the whey, or "top-milk," as their digestive powers gain strength.

It may be asked, what advantage has whey over a solution of lactose as a diluent? It certainly contains "antiscorbutic" properties which a solution of milk-sugar does not, and, moreover, it contains soluble proteids and a certain amount of fat. The author has frequently found infants improve and gain in weight after whey has been substituted for sugar water or barley water as a diluent for milk, and his experience is strongly in its favor. But more than the average intelligence is wanted in the nursery to carry out details.

Comby: Digitalis in Pediatrics. (*Rev. Internat. de Méd. et de Chirurgie.* Vol. ix., No. 11.)

Children are very sensitive to the action of digitalis. Its use is indicated in cardiac disease, whether congenital or acquired, whenever the muscular contractions become insufficient

in power. It is a heart tonic, of especial value in disease of the mitral valve, and contra-indicated in aortic insufficiency until the pulse becomes rapid and irregular. Digitalis is also indicated for its diuretic action in certain respiratory diseases, like pleurisy and hydrothorax; in pneumonia, severe bronchitis and grippe for its ability to aid the heart, embarrassed as it is by the pulmonary lesion. In severe and repeated hæmoptyses its usefulness consists in slowing the heart beats and thus relieving the pulmonary congestion. Chronic congestion of the kidney and chronic nephritis are both indications for the use of digitalis, unless there is hypertrophy of the left ventricle. In acute infectious diseases it is of value if used early enough, before the myocardium has undergone marked degeneration. Digitalis is not contra-indicated in acute nervous affections, although its direct sedative action is not certain.

Because of its cumulative action, digitalis should never be given for a longer period than seven or eight consecutive days; then it must be omitted for eight or ten days before it can be resumed.

Townsend, Charles W.: Home Modification of Milk. (*Boston Medical and Surgical Journal.* 1899. Vol. cxl., No. 12.)

Top milk, water that has been boiled, sugar of milk, and lime-water to neutralize and make alkaline the cow's milk, and in some cases the milk left after removing the top milk, are all the ingredients needed for preparing modified milk. With a 10 per cent. cream it is evident that one ounce of cream in a twenty-ounce mixture would give a percentage of one-twentieth of 10 per cent., or one-half of 1 per cent. of fat. In the same way the percentage of albuminoids would be one-twentieth of 4 per cent., or .2 per cent. The percentage of sugar would be the same as that of albuminoids.

One more fact is needed before formulating a rule for home modification, and that is that an even tablespoonful of sugar of milk weighs three and one-half drachms and that each tablespoonful added to a twenty-ounce mixture raises the percentage of sugar by 2 per cent.

The rule to be remembered is this: Each ounce of 10 per cent. cream in a twenty-ounce mixture represents .50 per cent. of fat, .20 per cent. of albuminoids and .20 per cent. of sugar; and each even tablespoonful of sugar of milk represents 2 per cent.

If the top quarter is taken from a bottle or can of milk that is allowed to stand from six to eight hours, this top milk will contain about 10 per cent. of fat. The percentage of albuminoids in this top milk is practically the same as in whole milk, that is 4 per cent., and it will be seen that the relation between the fat and albuminoids is the same as in woman's milk, the fat being two and one-half times as great, that is, 10 to 4, or 4 to 1.60.

Thus if we order top milk four ounces, water fifteen ounces, lime-water one ounce, sugar of milk two tablespoonfuls, we are making a formula of fat 2 per cent., sugar 4.80, and albuminoids .80. If we order eight ounces of top milk, eleven of water, one of lime-water, and two and one-half tablespoonfuls of sugar of milk, we are making a formula of fat 4, sugar 6.60, albuminoids 1.60, and so on.

Of course this extremely simple method gives a fixed relation between the fat and the albuminoids, the fat being two and a half times as much as the albuminoids, the normal relation in human milk. If we wish to increase the albuminoids without increasing the fat, it is necessary to add the milk from which the cream has been removed or whole milk or top milk containing less than 10 per cent. of fat.

Thus it is often desirable in the case of an infant of five or six months or older to gradually increase the albuminoids without increasing the fat beyond 4 or 5 per cent. This can be done by pouring off more of the top milk so that there is less fat in proportion, while the amount of albuminoids remains 4 per cent., as at first. Dr. Harrington kindly analyzed a specimen of top milk obtained by pouring off the upper half, using the same milk that gave about 11 per cent. in the upper quarter. This he found contained 7.18 per cent. of fat.

A mixture made up of half of this top milk and half water would give fat 3.60, albuminoids 2, while two-thirds of this top milk and one-third of water gives fat 4.80, albuminoids, 3.66.

The sugar can be raised to any desired amount, remembering the rule already given, that each level tablespoonful added to a twenty-ounce mixture raises the amount of sugar by 2 per cent., the amount of sugar in the mixture already being the same as the amount of albuminoids.

On the other hand, a greater proportion of fat to albuminoids than the normal standard of woman's milk cannot be obtained at home without the use of thicker cream, but a resort to this is

rarely necessary. In digestive disturbances, where the fat, sugar and albuminoids all have to be reduced to minute quantities, the nutritive value of the mixture can be greatly increased without taxing the digestion, by the addition of raw white of egg. Thus one ounce of top milk, eighteen ounces of water, one ounce of lime-water and one and a half tablespoonfuls of sugar of milk, giving the formula, fat .50, sugar 3.20, albuminoids .20 can be made much more nourishing by the addition of the whites of one or two eggs, and will be retained where an increase of the milk would not be.

The amount, twenty ounces, is a convenient one, but it may be necessary for the nurse to make up half as much again or twice as much for the day.

In preparing the food for the day, after the top milk, water, lime-water and sugar of milk have been measured out and mixed together in a pitcher, it is well to have as many bottles as there are feedings, and pour the proper number of ounces into each bottle. Stoppers of cotton wool should be used, whether the milk is to be Pasteurized or not. The process is a simple one, needing in the nurse no more intelligence than is required in preparing the patent foods. For the physician, the time occupied in describing the process and the amount of mental effort to calculate the proportions of the ingredients are both slight.

Oberlaender, Otto: The Dietetic Treatment of Intestinal Catarrh in Children. (*Dissertation, University of Bonn.* 1899.)

The author reports fifteen cases of acute and thirteen cases of chronic intestinal catarrh in which excellent results were derived from the use of lacto-somatose, both as a food and astringent. In many cases a cure resulted in three, or even less days, in a few after the administration of one to two teaspoonfuls of the preparation. In cases in which recovery did not ensue until the lapse of a week or more, the digestive disturbances had been present for a long time, or were of marked severity. In some of these cases also the administration of the preparation was discontinued too early, so that recurrences took place. In order to avoid these, therefore, the administration of lacto-somatose was continued for a number of days, even after a complete cure had been effected. The preparation was well tolerated, and while devoid of any decided astringent effect, it exerted a

favorable influence upon the intestinal mucosa and at the same time supplied to the patient a sufficient amount of highly assimilable nourishment to tide him over the critical period of the disease, acting as a perfect substitute for other nitrogenous food. It is therefore recommended by the author in conditions of fever and marked waste of albuminous tissues, in acute conditions of exhaustion from loss of blood, as well as in diseases of the digestive tract in which it is desirable to avoid any mechanical irritation of the gastric mucous membrane.

Richards, George L.: Earache in Children. (*Boston Medical and Surgical Journal.* 1898. Vol. cxxxix., No. 4.)

In an abstract of this article in the March number an important portion, describing the author's own method of treating aural pains was by mistake omitted.

Of late, he has been using aural bougies. They are the aural bougies of Gruber modified by Woods of Dublin, to which he has added from 3 to 5 per cent. of carbolic acid. They each contain three-sevenths of a grain of liquid extract of opium, one-fourteenth of a grain of cocaine and one-fourteenth of a grain of atropia in gelato-glycerin, to which is added the carbolic acid. The proportions of gelatine and glycerin are important, and should be such that the bougie when inserted into the ear readily dissolves. To effect this there should be no more gelatine than is necessary to hold the glycerin in shape. When made they are covered with lycopodium. To use, wash off the powder with a little warm water, stick the end of a pin or toothpick into one end and then slip into the ear. They are very slippery and can be inserted without causing the slightest pain. Stopper the ear with cotton and lay the child down with a lightly filled hot-water bottle over. The bougie soon dissolves and the anodyne effect will last for hours. Furthermore, the glycerin is distinctly curative in that it tends to draw out some serum from within and lessen the tension. A paracentesis may perhaps be prevented.

The following is the formula for Dr. Richards' modification of Gruber-Woods aural bougies: Carbolic acid, 7 minims; fluid extract of opium, 6 minims; cocaine, 3 grains; atropine, 3 grains; water, 52 minims; Gelatine, 18 grains; glycerin, 158 grains. To make 42 aural bougies.

In connection with any of these external remedies the

author believes in giving, if there is any fever, from one-eighth to one-half a minim of tincture of aconite hourly for a few doses, sufficient morphia or opium in some form to in a measure quiet the pain, and a saline cathartic. The pain is apt to be worse at night than in the day, and we must not deceive ourselves and think the attack is over because with the advent of day the patient seems better.

Ascher, S.: Chlorosis and its Treatment. (*Allegmeine Medizin. Cent. Zeitung.* 1898.)

Chlorosis in its typical form occurs especially in females at the time of puberty. It is generally amenable to medical treatment, but there are cases in which all efforts to effect a cure are unattended with successful results. We are inclined in such cases to call to mind the explanation given by Virchow, who assumes that chlorosis frequently depends upon a congenital narrowing of the arteries; yet this explanation is of little aid to the practical physician. If we remember that the action of iron —our panacea in chlorosis—is yet a mooted question, and that doubt still exists as to whether iron is capable of absorption by the stomach or intestines, it is natural that we should welcome preparations which promise to give better results than those in previous use. It is well-known that in the hæmoglobin of the red corpuscles manganese is constantly found in connection with iron.

Opinions have always been divided as to the significance of manganese in the blood, as regards the question whether manganese is really a constant constituent of hæmoglobin or an occasional one. We know that the function of the red corpuscles to take up oxygen is chiefly attributable to the presence of iron, but an active part in this direction has also been ascribed to manganese. While in chloride of iron one-third of the chlorine is active, this property belongs to a still greater extent to manganese chloride, a combination of chlorine and manganese corresponding to that of chlorine and iron.

Iron chloride is a much more stable combination than manganese chloride, which decomposes even at ordinary temperatures and gives off one-half of its chlorine; it is, therefore, quantitatively more active than iron. Manganese as a constituent of the blood exerts a stronger polarizing effect upon the oxygen and gives off the latter more readily than iron. Manganese

is, therefore, a more powerful oxidizing agent than iron, and, absorbed into the body, will exert an energetic assimilative action.

Joh. Kugler, in 1838, was the first to recommend the manganese salts in scrofulosis. He made the observation that persons who handled manganese oxide in a chlorine bleachery enjoyed an immunity from diseases of the skin, bones and glands.

In 1844 Hannan found a diminution of manganese in scrofulosis, and to a still greater extent in anæmia and chlorosis. In chlorosis he found that the quantity of iron was sometimes chiefly diminished and sometimes that of manganese. He therefore distinguished chlorosis from lack of iron and manganese. Although this schematic classification cannot be accepted, other investigators of more recent times have established a connection between chlorosis and a deficiency of the quantity of manganese in the hæmoglobin.

Petrequin in 1852, recommended manganese in combination with iron. He maintained that in all cases in which iron is indicated, but proves ineffective, there is a deficiency of manganese in the blood. Among recent authors Rühle, of Bonn, has warmly recommended the combination of manganese with iron in the treatment of chlorosis, and lately manganese has been employed with much success for amenorrhœa in young persons between the ages of eighteen and twenty years.

Notwithstanding these high commendations from various sources, manganese was not generally adopted in the treatment of chlorosis, and in cases when iron failed to act resort was had to purely dietetic measures. The reason for this was that no preparation existed in which iron was combined with manganese in a readily absorbable form. Such a preparation, however, is Gude's pepto-mangan. This preparation has been tried by the author and a few colleagues in various diseases associated with a depreciated condition of the blood, altogether in eighty cases.

In the simple chlorosis of females during the period of puberty he has employed it in about thirty cases with uniformly good results. The remedy was always well borne, digestive disturbances were never observed, the marked symptoms of headache, vertigo, palpitation of the heart, and loss of appetite were improved within a few weeks. The bodily weight increased on an average one-half kilogramme (about one pound). Numerous histories are given in detail, most of the patients being young girls suffering from chlorosis and a few being children showing evidences of simple anæmia.

SURGERY.

Charpentier: Coxa Vara. (*Rev. d'Orthop.* 1898. Nos. 3 and 4. *Edinburgh Medical Journal.* 1899. Vol. lxvii., No. 526.)

At Kirmisson's instigation, Charpentier has made a critical study of this affection, based on the published reports of Müller, Lauenstein, Hoffa and Kocher, on the specimens in the museums, and on the clinical material of the hospitals in Paris.

His first contention is, that coxa vara is not a morbid entity but a group or collection of several pathological conditions. In the sense that coxa vara implies a curving of the neck of the femur, it may result in young subjects from rickets, from minor or attenuated forms of osteomyelitis, from hip-joint disease, from arthritis deformans, and from fracture of the neck of the femur. In those of rickety origin, the deformity is bilateral, is little marked, and does not interfere much with the functions of the limb. The neck is short, thick, and curved; the angle which it makes with the shaft is less than normal, but is never less than a right angle. The deformity is only recognized when one is on the look-out for it, and consists in upward displacement of the trochanter, limitation of abduction, eversion, and limitation of internal rotation. The limitation of internal rotation does not depend on the bending of the neck, but on the rickety curve of the shaft of the femur. The shortening of the extremity amounts to 1 to 1.5 cms. at the most.

The author has observed the deformity in six out of thirty-two rickety children attending his out-patient clinique. In those cases resulting from attenuated forms of osteomyelitis there may be considerable shortening of the limb, stiffness of the joint, and other functional disturbances, including pain.

The diagnosis from rickets is made with difficulty, unless the inflammatory changes are prominent and are attended with irregular rises in temperature. The author is quite convinced that a certain number of cases of coxa vara belong to the category of hip-joint disease and of arthritis deformans, the latter being especially present in cases with marked functional disturbance. He is also inclined to regard greenstick fractures of the neck of the femur as an etiological factor; occurring, as it does, in early life, it may give rise in later years to the clinical features of coxa vara. Lastly, the occurrence of late rickets, localized to the neck of the femur, must be accepted as a cause of the deformity, just

as localized rickets is regarded as an important factor in the production of the genu valgum of adolescents. The author refers to the difficulty of distinguishing these various pathological conditions, which may result in coxa vara, from one another, and to the failure of the Roentgen rays, in helping us to make a differential diagnosis.

Alexander, R. J.: Operation for Ovarian Cyst in a Girl of Eleven Years. (*The Texas Medical Journal*. 1898. Vol. xiv., No. 4.)

The history of this case dated back but two months before the operation. At that time, notice was first taken of enlargement of the abdomen. Upon examination the diagnosis of ovarian cyst was made. The most remarkable features were: age of the patient, size and rapidity in growth of tumor.

One week before operation this tumor had completely filled abdominal cavity, pressing against diaphragm, so that respiration was impaired, so much so, that to relieve the pressure the author introduced a trocar into the cyst and drew off about one gallon of fluid, which only relieved the lower portion of the enlargement. The operation was performed in the usual way and the patient made a perfect and uneventful recovery.

McKenzie, B. E.: Hip Disease. A Review of its Treatment and Results. (*The Canadian Practitioner*. 1899. Vol. xxv., No. 1.)

After an extended article on this subject the author draws the following conclusions:

1. Hip disease is a local manifestation of a constitutional disease.

2. Early operative interference is seldom justifiable.

3. As soon as softening can be determined, the surgeon should operate and obey indications, observing all care not to injure needlessly the mechanical integrity of the joint, and knowing that he is but aiding nature by removing tissue which she has already cast off.

4. In the future management of the wound, the principles of asepticism and antisepticism must be carefully observed.

5. From the earliest moment, efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance.

6. Constitutional treatment is indicated as in other tubercu-

lar affections. Great emphasis should be laid on obtaining the freest exposure to sunlight and fresh air.

7. After excision a perfect recovery is never effected, the mechanical integrity of the joint having been interfered with.

8. Following mechanical and constitutional treatment, perfect restoration of function is sometimes obtained.

9. Even when softening of tissue occurs, and necessitates incision, there is sometimes a perfect restoration, and frequently a highly useful return of joint function.

DaCosta, J. Chalmers: The Treatment of Harelip and Cleft Palate. (*Progressive Medicine.* 1899. Vol. i.)

Operations for these conditions continue to be the subject of doubt in many minds. Many of the procedures necessary are entirely within the range of the general practitioner, but there always remains a feeling of hesitation as to the methods most advisable to employ, and the most suitable time for operation. Towards solving such doubts an authoritative review of the recent literature of the subject, and conclusive statements as to what seems best in the therapeutic suggestions that have been recently offered by various writers will be of the greatest value to the busy practitioner.

A review of the treatment of harelip and cleft palate is given by the author. From it we gather that the tendency is more and more towards early operation. The third or fourth month used to be considered the earliest suitable time to operate. Murray now counsels operation in the fourth week; Mumford and Heath think it should be undertaken not later than from the sixth to the eighth week. Where cleft palate exists it is not operated upon so early. The harelip is operated upon alone, and the persistent pressure made by the closed lip helps to lessen the gap in the growing bone. The operation on the cleft palate is put off for awhile, but this, too, not nearly so long as it used to be. If the closure of the defect is delayed until the child has learned to talk, the peculiarities of speech, especially its offensive nasal character, will never be corrected. The authorities are agreed, then, that a cleft in the soft palate should be closed about the sixth month, and in the hard palate during the second year.

The practical suggestions collected from the recent literature of the subject by DaCosta are very valuable to the ordinary

practitioner. Space will permit us to give but a few of them. The use of the knife in operation rather than the scissors, because the latter crushes tissue more, leaving its vitality impaired, especially at the edges where this is so important for subsequent union; the avoidance of pins or heavy sutures in securing proper apposition after the operation is advised, though these are faults of technique in this matter that we fear have been so ground into the present generation by text-book and teacher that failures of union due to these crude early methods will still continue to be frequent. The suggestion by Mumford as to anchoring the nares with shotted wire will remove a very common cause of failure due to the child's inevitable tendency to "turn up its nose" at and after the proceedings.

In double harelip it is advised to remove the intermaxillary bone by sub-periosteal operation a week before the operation on the lip. If left it is liable to undergo necrosis. Its removal leads to some flattening, but this will not be great if the bone be removed by sub-periosteal operation, and if but one side of the harelip be operated upon at a time. Among the directions for the operation for cleft of the hard palate, we note these pre-operative measures of precaution from Owen, which are sometimes forgotten, but of which the practical value it is easy to see: never operate unless the child is in the best possible health; remove carious teeth, adenoids and enlarged tonsils before operating, and operate whenever possible in fine weather, so that the patient can get out of doors soon afterwards. The neglect to remove such ready sources of infection as carious teeth and those harborers of microbes, the irresistive tissues of adenoids and enlarged tonsils, is very probably the source of a good many of the failures in uranoplastic osteo resection.

Hobbs, Arthur G.: Mouth Breathing in Children, Particularly as a Result of Adenoids. (*Atlanta Medical and Surgical Journal*. 1898. No. 7. *Medical Chronicle*. Vol. ix., No. 5.)

The author, after a review of the subject of nasal obstruction, recommends for the removal of adenoids, with or without anæsthesia, the use of his own forceps, with small shanks and large fenestræ, so as to rapidly make a number of grasps before withdrawing the instrument. He does not believe that total removal of adenoids is essential, though desirable.

Marcy, H. O.: Operations on Spina-Bifida. (*Boston Medical and Surgical Journal.* 1899. Vol. cxl. No. 10.)

In discussing this subject, the author expresses the belief that the essentials for the success of operative measures for the cure of spina-bifida to be as follows: If the tumor is of considerable size, before opening the sac the head and shoulders should be placed lower than the portion of the spine to be operated upon, and maintained in this position until the final closure of the wound. The sac is to be freely opened and all nerve filaments are to be carefully preserved and replaced. The dissection is to be made sufficiently free to permit a careful utilization of the structures requisite for a re-formation of the canal. It is important to suture the sac so that the spinal fluid will not escape through the re-formed structures, and in my opinion this is best effected by the use of a fine tendon applied in a double, even, continuous suture, using a needle of moderate size—so-called shoemaker's stitch. This gives perfect coaptation without undue constriction, with a minimum of devitalization, and is water tight. Th superfluous portion of the sac is cut away. The strong fascia on either side is freed sufficiently to permit its inversion without undue tension, and is inverted toward the median line and held in coaptation by suturing it in a similar manner.

The skin is held in apposition by a light continuous running suture, and the wound is sealed with iodoform collodion without drainage. The patient should be kept in a horizontal position for some days, and if the wound is aseptic primary union will supervene and a permanent cure will be the probable result. I take pleasure in calling attention to the fact that the operative cure of spina-bifida in all its essentials is an American operation.

Sir Charles Bell, in 1791, suggested the possibility of the cure by surgical interference, but Dr. A. Trowbridge, of Watertown, N. Y., was the first who attempted to put into practice the suggestion of the great Edinburgh surgeon. He reports three successful cases, followed by complete cure. Modern aseptic surgery gives a comparative certitude of result, which causes early operative interference to be earnestly recommended as the rule of practice.

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Original Communications.

ACUTE INFLAMMATION OF THE MIDDLE EAR COMPLICATING SCARLET FEVER AND MEASLES.*

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In a paper on "Scarlatinous Otitis," which the writer read before the Pediatric Section of the Academy of Medicine, in March, 1889, (*American Journal of Obstetrics*, April, 1889,) statistics of more than 5,000 cases were presented to show that 10 per cent. of all deaf persons owed their affliction to an aural complication of scarlatina. During the intervening decade our treatment has not changed to any marked degree, but, fortunately its adoption in the early stages of the otitis complicating scarlet fever and measles has become more general; as a result there has been some diminution in the number of patients who present diseases of the ear following these exanthemata.

Though measles and scarlet fever are combined for discussion in this paper, it is the latter disease which is entitled to the bulk of consideration. Otitis complicates measles less frequently than it does scarlet fever; furthermore, when a complication of measles, it is more apt to be catarrhal in form and mild in course.

Aural complications occur in about 20 per cent. of all cases of scarlatina. In the paper above referred to, written in 1889, the percentage is given as from 22 to 33. In the Willard Parker Hospital there were 575 cases of scarlet fever from January 1, 1898, to May 1, 1899. Among these 575 cases there were 96 with aural complication, less than 17 per cent. The frequency varies in different years and in different epidemics, being great

*Read before the Pediatric Section, New York Academy of Medicine, May 11, 1899.

at certain times and less common at others; it is greater during the colder months than during summer. In a general way, otitis is more common in severe forms of scarlatina than in mild cases; but to this statement there are exceptions. The intensity of the aural inflammation usually bears some relationship to the severity of the attack of scarlatina; but this again cannot be regarded as an invariable rule.

Exactly as when occurring under other circumstances, the acute otitis of scarlet fever and measles can be divided into two forms:

1. Inflammation of the catarrhal type, in which the secretion and discharge are mucous or sero-mucous, often containing a small number of pus cells, and in which there is comparatively little direct damage to the contents of the tympanum and its walls; and

2. The purulent form, in which the secretion and discharge are distinctly purulent or muco-purulent, and there is always more or less destruction of the contents of the tympanic cavity and often of its walls.

In the first class of cases (catarrhal), the symptoms are milder than in the second. But this is not always the case; examples of the catarrhal type may present very severe symptoms while some of the purulent cases run a course of light or moderate intensity. But the distinction in regard to the tendency to destruction of tissue is a constant one and it is important that this fact be emphasized. It must also be remembered that an otitis may begin as a catarrhal inflammation and, before or after perforation of the drum membrane, may change to the purulent form. Clinically it is often impossible to differentiate between the two forms with any degree of certainty until after perforation, although, as will be mentioned later, there are some variations in symptoms which point to the existence of either type.

There is very good reason for believing that the difference in the character of the inflammation depends upon the nature of the infection—the micro-organisms which seem responsible for the invasion of the tympanum. Streptococci, staphylococci, pneumococci and other micro-organisms have been found in the discharge. But a sufficient number of bacteriological examinations have not yet been made to give us exact knowledge in this direction. Perhaps after further research, we may be

able to divide cases of otitis according to the particular micro-organisms which preponderates in the secretion and discharge. The streptococcus seems likely to be responsible for the infection in the very severe forms of acute purulent otitis. Probably the majority of cases of otitis, which occur with measles, are of the catarrhal type, while in scarlet fever the greater number are of the purulent variety.

Otitis usually occurs near the end of the first week of scarlet fever, less frequently earlier or later in the disease; in measles it is apt to begin earlier. The complication results from an extension of the inflammation of the throat and nose through the Eustachian tube; hence its severity generally corresponds to that of the throat symptoms. This is not, however, always the case. Cases of scarlatina have been recorded in which all symptoms were so light as to leave some doubt regarding the diagnosis; after some days, there was an otitis which strengthened the diagnosis, and later, the occurrence of desquamation made it certain.

The fact that the aural complication most often begins at the end of the first week aids us in an early diagnosis, since at this period the fever has partially or completely subsided; a rise in temperature and increase in constitutional symptoms then excite suspicion of some complication. It is different in the more unusual instances in which the otitis occurs earlier, when the symptoms of scarlatina at their height may mask those of the ear complication.

The otitis is very frequently bilateral; but at a given time, the two sides will usually present different stages of progress; the second ear is apt to become involved one or more days after the commencement of the symptoms in the first. The records of the Willard Parker Hospital show that out of 96 cases, 30 were bilateral, 40 affected the left ear, and 26 the right ear.

The advent of the aural complication is commonly announced by a rise of temperature, averaging 102° or 103°, sometimes higher, and the attendant symptoms of fever—rapid pulse, constipation, headache, restlessness, anorexia and thirst; occasionally there is repeated vomiting, delirium and sometimes convulsions; in older children there may be chills or chilly feelings.

The patient, if old enough, will complain of intense pain referred to the depth of the ear and often radiating in the direc-

tion of the various branches of the fifth nerve. A feeling of fulness and throbbing, various noises, more or less deafness and sometimes dizziness are present. The pain is either dull or lancinating in character, deep-seated and frequently excruciating. All these symptoms are continuous but are much worse at night.

In children who are too young to give us such subjective information, besides the constitutional symptoms already mentioned, our suspicions will be excited by the fact that the hand is placed on the affected ear or on the corresponding side of the head, which the child may also roll into the pillow; some authorities, however, assert that the affected side is kept away from the pillow.

Examination of the drum membrane will give a characteristic picture. At an early stage there will be more or less redness—from a faint pink to a dull red; this discoloration may be either general or confined to one part of the membrane. When limited to the upper part (Schrapnell's membrane), the inflammation is likely to be purulent in form and severe in type. When such limitation occurs, it aids us in arriving at the conclusion that we are dealing with a purulent and not a catarrhal otitis media: other signs which point in the same direction are marked constitutional and local symptoms, and later, perforation of the membrane and the escape of pus; in the catarrhal cases, the redness is more apt to be diffuse, the constitutional and local symptoms less severe and quite a number of cases run their course without perforation. The drum membrane may be covered by a desquamating layer of epithelium of grayish color, which it will be necessary to remove with cotton upon a probe before the redness of the membrane becomes visible.

In the early stage of many of the cases, however, it will be absolutely impossible to say whether the otitis is going to assume the catarrhal or the purulent form, mild or severe. For tunately, as far as treatment is concerned, it is unnecessary to arrive at any definite conclusion in this direction.

Soon, there is added more or less bulging, either involving the entire drum membrane or a greater part of it; in some cases the bulging is limited to the posterior portion; in others to the upper part or the postero-superior quadrant; in the last two situations we will suspect a severe form and a purulent type of in-

flammation. When the bulging is general, it usually destroys all landmarks of the drum membrane except the short process of the malleus. Certain additional evidences of the exudation in the tympanum occasionally present themselves. It sometimes happens that we can note the level of the secretion in the tympanum or that a yellowish or greenish-yellow discoloration indicates the existence of pus in this cavity.

During the early stage of the inflammation it is possible for resolution to set in, the products escaping through the Eustachian tube; this will be more apt to occur in the catarrhal variety; it has never been demonstrated that a purulent secretion has obtained any other outlet from the middle ear than through an opening in the drum membrane. As a matter of fact, except in mild cases of the catarrhal type, such a fortunate ending is very unusual. The pent-up secretion forces an outlet through the membrane and rupture takes place. This perforation usually occurs in the posterior part of the membrane, less frequently in other parts; it may occur in any portion.

With the escape of the secretion, the symptoms usually subside; but it is not uncommon to have an elevation of temperature persist for a day or two. If the case be mild and catarrhal, the perforation soon closes and there is recovery without damage to the ear; in some of these cases, however, after perforation, the character of the inflammation changes and a chronic purulent inflammation of the middle ear results; less frequently a chronic catarrhal otitis media is the sequel. If the inflammation be of the purulent form, the discharge may cease, the opening close, and useful and even perfect hearing remain, notwithstanding the fact that more or less damage to the contents of the tympanum results in every case of this sort. But after spontaneous perforation of the drum membrane the majority of patients are less fortunate. In many of these, the acute changes to a chronic process, the discharge continues and with it the destructive process which is responsible for it, the perforation shows no tendency to heal, and a condition is presented which constitutes the so-called "running ear"—a chronic purulent inflammation of the middle ear with perforation, more or less sloughing of the lining of the tympanum, caries of the ossicles and bony walls. Such a sequel constitutes a serious condition on account of the impairment of function, the necessity for long-continued, tedious and patient treatment, and the menace

to the health and even the life of the patient through extension of the inflammation to the mastoid and the meninges, and the danger of cerebral abscess and thrombosis.

In many cases, the spontaneous opening in the drum membrane will be small in size and entirely insufficient to allow evacuation of the middle ear; then after a short period of improvement, the symptoms will continue and the perforation will close.

The treatment of otitis complicating scarlet fever and measles may be divided into (1) *Preventative*, the care of the nose and throat so to diminish the risk of extension to the tube and middle ear; (2) *Abortive*, the management of the early stages for the purpose of causing resolution without perforation, and (3) *Paracentesis* of the drum membrane, in cases in which the abortive treatment has been unsuccessful.

In regard to the prevention of this complication, there is no doubt that attention to the nose and throat has some restraining influence upon the tendency of the inflammation to spread from these parts to the ear. The nose and throat should be kept as clean as possible. Very few children have been taught how to cleanse the nose properly, and even adults are usually ignorant in this respect. To properly cleanse the nose, the nostril of one side should be compressed so that the entire force of the expiratory effort is expended upon the opposite, free, nasal passage. In this way secretions are readily expelled from the nose, and the force of the column of air is not scattered through the nose, throat, tubes and middle ears, as happens when we apply the handkerchief in the customary, but improper method. In the diseases under discussion, the patients are usually unable to cleanse the nose and throat, and must be assisted in the performance of this important process. The writer prefers swabbing for this purpose. A solution of sodium chloride, three-quarters of one per cent., answers as well as anything. Or any weak cleansing or antiseptic solution may be used, preferably warmed. Such a solution is applied upon cotton on a straight applicator for the nose, and a bent one for the throat.

As soon as there are evidences of aural complication the abortive treatment should be begun. Absolute rest is of the greatest importance and must be secured under all circumstances; a sufficient amount of an opiate to produce sleep should be administered or some other sedative may be given.

The writer is in the habit of prescribing acetanilid and caffein to relieve the pain and has been well satisfied with the results. Evacuation of the bowels, light diet, proper temperature of the room and the avoidance of draughts of cold air will probably have been looked after as part of the treatment of the original disease, and hence need merely be mentioned.

Dry heat should be employed by means of a hot water bag upon which the affected ear is allowed to rest; poultices are not desirable. Another means of controlling the pain and acting favorably upon the course of the inflammation is the use of hot water, allowed to run into the canal and in this way to exert its influence upon the drum membrane. The temperature of the water should be 115° F., and it is customary to dissolve a teaspoonful of sodium chloride or of boric acid in each pint. It can be applied in one of two ways: A very convenient and rapid method is to warm the water in a tablespoon and to pour it into the canal, repeating the procedure every few minutes until the pain has subsided or become bearable; another plan is to allow the warm solution to flow into the canal of the ear from a fountain syringe, being careful that the bag is held just high enough for the water to escape, thus avoiding unnecessary force and pressure.

Local abstraction of blood is indicated and often relieves. This is accomplished by two leeches placed upon the region immediately in front of the tragus; or the artificial leech, either that of Heurteloupe or the scarificator and cup of Bacon may be applied in this situation, and about an ounce of blood abstracted.

A great deal has been written in favor of and against inflation in the early stage of middle ear inflammation. The writer is an advocate of inflation, preferably by means of the catheter; but when this is impossible, by the Politzer method. He has never seen any harm result from this procedure, and it is certainly productive of favorable action in a number of cases. But it must be used properly. The nose and throat must receive a thorough preliminary cleansing and inflation must be practiced very gently. It is difficult to pass the catheter in a child, but it can be done with care and patience, and the plan certainly has advantages over inflation by the Politzer method.

Combined with inflation, the writer is in the habit of employing suction of the tube and tympanum. This addition

seems so simple that he hesitates to claim any originality for the method; yet he has never seen it described nor heard of its being used by others. It has given excellent results in this stage of otitis.

Suction of the tube and tympanum consists in the employment of a current of air in the reverse direction to that used in inflation. After the catheter has been introduced and the middle ear inflated, the finger is placed upon the valve of the bag while in a compressed condition. The elasticity of the rubber tends to cause the bag to assume its original shape, and since no air can enter through the valve, a suction force is generated. If the finger be kept on the valve constantly, no progress is made, since the suction causes the walls of the tube to collapse. But by allowing a little air to enter the bag by releasing the finger for a moment, again applying the finger, and continuing this alternately, the contents of the tube and tympanum tend to be drawn towards the catheter. Even when the catheter cannot be inserted, suction may still be used, following inflation with the Politzer method.

In a certain number, moderate in the catarrhal cases and small in those of the purulent type, the combined procedures just described under abortive treatment will be effective and cause resolution. But in a very considerable proportion of cases the abortive treatment will be unsuccessful. If the symptoms continue for twelve hours, or if, as is often the case, when abortive treatment has been unsuccessful, there is some diminution in the symptoms during the day, but increased severity the following night, the indication for opening the drum membrane is imperative. It is then unnecessary to decide whether the otitis be catarrhal or purulent; it is unwise to wait any longer; the membrane should be incised. Paracentesis promptly done can never do any harm, even though there be a suspicion that the case will eventually be cured without it. On the other hand, in a great many cases, it is the means of saving the ear from chronic purulent inflammation of the middle ear with permanent injury, impairment of function, offensive discharge, necessity for tedious after-treatment, and even danger of life. The physical signs obtained upon inspection of the drum membrane should have much weight in deciding for or against paracentesis; but when in doubt it is proper to incise.

Regarding the method of doing paracentesis of the drum

membrane, not very much need be said. The head of the patient must be held firmly; a forehead mirror should be worn; the illumination, whether daylight or artificial, must be good; the canal should be swabbed out gently with warm solution of bichloride, 1.5000. The knife or paracentesis needle must have the sharpest possible edge, so as to reduce the pain of the incision, which is always great, but which is excruciating with a dull or even moderately sharp instrument. Cocaine does not materially reduce the sensitiveness of the membrane; neither does solution of guaiacol. Repeated but gentle swabbing with solution of cocaine may be tried; it is possible that there is some effect; when the pain is so intense, it is impossible to properly estimate slight reductions in sensitiveness.

It is customary to use the small double-edged, broad needle, with obtuse-angled shank, known as the paracentesis needle. The writer prefers the small, narrow, thin-bladed knife ordinarily used for cataract operations—the Graefe knife; the absence of angle in the shank has never seemed a disadvantage, while in sharpness of edge this form of knife represents the extreme of possibility.

The incision should be made where there is the greatest bulging. It should be bold and comprise all the bulging portion. It is a mistake simply to make a puncture. Where there has been a spontaneous opening, this is frequently small and inadequate, and must be enlarged by a bold incision. Usually we will find most bulging in the posterior portion of the membrane; then the incision should commence just behind the short process of the malleus, and extend downward. If Schrapnell's membrane is the only portion which bulges, the incision should be made here.

Following the incision, with a variable amount of bleeding, there will be an escape of the accumulation in the tympanum-serum, mucus and pus in variable proportions. Often nothing but bloody serum escapes until some hours or longer afterward, when the discharge becomes muco-purulent or purulent. A little absorbent cotton is placed loosely in the meatus, and the child directed to lie upon the affected ear, so as to facilitate drainage.

No irrigation of the canal is indicated at this period, nor afterward, if the secretion from the middle ear escapes freely. But if tenacious mucus or thickened pus blocks up the canal, it

is proper to remove such mechanical obstruction by irrigation with some warm antiseptic solution as often as necessary.

In many cases which are properly treated, the discharge will cease in a day or two, and the opening close; in some patients, however, the discharge will continue to remain purulent or change from sero-mucous to purulent, the opening remain, and a chronic purulent inflammation of the middle ear result. In a number of cases, the paracentesis gives but temporary relief; the opening closes, the exudation continues, there is an exacerbation of the symptoms, and the operation must be repeated.

Extensive inquiry and search have shown that aural complications of scarlet fever and measles are somewhat less frequent than formerly, and fewer children have chronic inflammation of the middle ear as a sequel. In the paper on "Scarlatinous Otitis," written in 1889, numerous references are given to show that from 4½ to 5½ per cent. of all ear cases were due to scarlet fever. Later reports show a diminished number. Bezold, for instance (*Das Hörvermögen der Taubstummen*, 1896), gives 640 as the number of ear cases following scarlatina, among 17,087 cases of ear disease seen by him in twelve years, from 1881 to 1892—less than 4 per cent.

This improvement in results is explained by the following reasons: 1. Cases of scarlet fever have been of a mild type in recent years. 2. It is customary to remove adenoids at a comparatively early period of life; the result of such interference is to diminish the risk of extension of the inflammation from the throat to the ears, if the child is attacked with scarlet fever. 3. More attention is paid to the condition of the nose and throat during the progress of the disease and before aural complications occur. 4. Paracentesis is resorted to more frequently and earlier than was the case formerly.

It seems likely that attention to the details given above, in connection with the description of the preventative and abortive treatment of the aural complications of scarlet fever and measles, would be followed by still better results. It is probable also that the number of aural sequelæ of these diseases could be diminished by the more frequent and earlier resort to paracentesis and by following the advice given above: When in doubt, incise!

692 MADISON AVENUE.

ACUTE MIDDLE EAR INFLAMMATION AS A COMPLICATION OF SCARLET FEVER AND OF MEASLES.

BY DAVID NEWTON BLAKELY, M.D.,

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This clinical study of acute middle ear inflammation as a complication of scarlet fever and of measles is based upon an examination of the records of all the patients ill with scarlet fever alone and with measles alone, treated at the Department for Contagious Diseases of the Boston City Hospital, for a period of nineteen months, immediately prior to September 1, 1898. It is a study from the standpoint of the general practitioner, not that of the aurist.

Twenty-two per cent. of the scarlet fever patients and 45 per cent. of the measles patients having the ear complication came under the direct observation of the writer.

The period under consideration offers a series of 649 cases of scarlet fever.

The number of patients at different ages is shown in the table on page 500.

The number of deaths was 41, or 6.32 per cent.

Of the 649 patients, 86, or 13.25 per cent., had acute middle ear inflammation. In 22 of the 86 cases the right ear only was involved; in 23, the left ear only, and in the remaining 41, both ears. The age of the youngest patient was six weeks; of the oldest, eighteen years.

Paracentesis of the tympanic membrane was done in one instance seven days before the eruption appeared. In another instance, the first ear symptoms were noticed, and paracentesis was done ninety-five days after the first eruption. This was in a boy who had three characteristic eruptions while in the hospital.

In 3 cases, 1 in a patient of eighteen, 2 in children under five, or 3.49 per cent. of the whole number, the suppurative process extended and necessitated mastoid operation. All three patients recovered.

Concerning the 19 cases coming under the writer's observation a few additional facts can be given.

Of these 19 patients, 6 had both ears involved. We have, therefore, twenty-five ears—eleven right and fourteen left—to

TABULAR STATEMENT OF 640 SCARLET FEVER PATIENTS AND 341 MEASLES PATIENTS, BY AGE.

		UNDER 1 YEAR.	BETWEEN 1 AND 2 YEARS.	BETWEEN 2 AND 3 YEARS	BETWEEN 3 AND 4 YEARS	BETWEEN 4 AND 5 YEARS.	BETWEEN 5 AND 6 YEARS.	BETWEEN 6 AND 7 YEARS.	BETWEEN 7 AND 8 YEARS	BETWEEN 8 AND 9 YEARS	BETWEEN 9 AND 10 YEARS.	BETWEEN 10 AND 15 YEARS.	BETWEEN 15 AND 20 YEARS.	BETWEEN 20 AND 30 YEARS.	OVER 30 YEARS.	TOTAL.
Table No. 1. Scarlet Fever Patients.	No.	5	17	43	72	60	72	52	52	38	41	84	32	64	17	640
	Per cent.	77	2.02	6.63	11.09	9.25	11.09	8.01	8.01	5.80	6.32	12.94	4.93	9.86	2.02	
Table No. 2. Scarlet Fever Patients with Middle Ear Inflammation.	No.	2	2	6	27	7	11	10	9	2	3	5	2	0	0	86
	Per cent.	2.33	2.33	6.97	31.30	8.14	12.79	11.03	10.40	2.33	3.49	5.81	2.33	0	0	
Table No. 3. Measles Patients.	No.	8	18	12	20	17	7	8	18	8	9	11	40	135	21	341
	Per cent.	2.35	5.28	3.52	5.86	4.98	2.05	2.35	5.28	2.35	2.64	3.22	14.37	39.59	6.16	
Table No. 4. Measles Patients with Middle Ear Inflammation.	No.	3	7	4	5	4	1	3	4	1	1	1	5	12	0	51
	Per cent.	5.88	13.73	7.84	9.81	7.84	1.96	5.88	7.84	1.96	1.96	1.96	9.81	23.53	0	

consider. Seven of these were discharging when the patients were admitted to the hospital; in 6 instances there was spontaneous rupture of the tympanic membrane, and in the remaining 12, paracentesis was done. Whenever paracentesis was done the external canal was disinfected with a 5 per cent. solution of carbolic acid, and after the incision a culture was taken. The results of the bacteriological examinations were as follows:

No growth,	4
Contamination,	1
Staphylococcus,	3
Staphylococcus and pneumococcus,	2
Staphylococcus, pneumococcus and streptococcus,	1
Pneumococcus, streptococcus and micrococcus tetragonus,	1

The number of successful cultures is so small that it would be unwise to attempt to draw conclusions as to the organisms most commonly present, though the relative frequency of the pneumococcus is suggestive.

The discharge from five of the ears had not entirely ceased when the patients left the hospital. It was, however, slight in amount in every instance, and in 2 cases ceased after a few days. The subsequent history of the other 3 was not obtained. In the remaining 20 cases the minimum duration of the discharge was four days; the maximum sixty days; the average thirty days.

Pain was present usually, but not always, before paracentesis or rupture of the membrane.

Two of the 19 patients died. One had an extensive broncho-pneumonia; the other marked septicæmia. Neither showed cerebral symptoms nor any evidence that the inflammatory process extended beyond the middle ear.

During the nineteen months under consideration there were 341 patients ill with measles of whom 25 died, or 7.33 per cent.; 51, or 14.96 per cent. had acute middle ear inflammation: 15 had the right ear only involved, 22 the left ear only, and 14 both ears. The table on page 500 shows the number of patients at different ages. The age of the youngest patient having the ear complication was six and one-half weeks; of the oldest, twenty-eight years. Paracentesis was done in one instance on the first day of the eruption; in another it was not required until twenty-four days after the eruption appeared.

Six of the patients came to mastoid operation, or 11.76 per cent. of all who had discharging ears. Five were adults and all recovered. The sixth was a child two years old on whom a mastoid operation had been performed in another institution shortly before the eruption of measles appeared. A secondary operation became necessary a week after entrance to the hospital, and six days later the child died.

Of the 23 patients coming under the writer's observation, 11 had inflammation of both middle ears. We shall speak therefore of thirty-four ears—eighteen right and sixteen left. Of these 2 were discharging at entrance. In 5 the membrane ruptured spontaneously, and in the remaining 27 paracentesis was done. Bacteriological examinations were made with the following results:

No growth,	3
Staphylococcus,	4
Pneumococcus,	1
Pneumococcus and staphylococcus,	2
Pneumococcus and streptococcus,	7
Pneumococcus, staphylococcus and streptococcus,	6
Pneumococcus, streptococcus and micrococcus tetragonus,	2
Pneumococcus, staphylococcus, streptococcus and micrococcus tetragonus,	2

The pneumococcus was present, it will be observed, in 20 of the 24 successful cultures, or in 83.33 per cent., and the pneumococcus associated with the streptococcus in 17 of the 24, or in 70.83 per cent.

The organisms present at the time of paracentesis, however, are not sufficient data to warrant a prognosis either as to the intensity of the inflammatory process or as to the duration of the discharge. Excluding from our thirty-four ears nine which are mentioned below, six in fatal cases and three which came to mastoid operation, we have twenty-five ears in patients who recovered. Of these twenty-five, two were still discharging when patients left the hospital. In eleven of the others, the discharge ceased in less than one week, in seven it ceased in less than three weeks, and in five it continued over three weeks. The minimum time was three days; the maximum, thirty-nine days; the average, fourteen and one-half days.

The organisms present in the ear in which the discharge ceased after three days were the pneumococcus and the micro-

coccus tetragonus, in the one in which the discharge continued thirty-nine days the pneumococcus, staphylococcus and streptococcus, while in two in which the discharge continued but six days there were present the pneumococcus, staphylococcus, streptococcus and the micrococcus tetragonus.

Of the 23 patients under consideration, 4 died. There were no autopsies. Three were less than two years of age. One of these was under treatment for marasmus in another institution when the eruption of measles appeared. Another had just recovered from pneumonia and a second pneumonia was the immediate cause of death. The third, who also had but recently recovered from pneumonia, died of nephritis. The ear inflammation could not be considered a cause of death in any of the 3 cases.

The fourth death was in an adult, and here the question of extension inward to the meninges of the inflammatory process was raised, but, unfortunately, never answered, and the case was such an obscure one in many ways that further discussion would be unwise.

There were three mastoid operations on 2 patients, 1 adult had pain in both ears with bulging of the membrane in each, and paracentesis was done on the fifth day of the eruption. Cultures showed the pneumococcus and streptococcus. Nineteen days later, a left mastoid operation was done. Culture from pus in the mastoid cells showed the same organisms as found at the time of paracentesis. There was a good recovery. Another adult required paracentesis of both tympanic membranes a week after the eruption appeared. Eleven days later a right mastoid operation was done. Culture from the ear had shown no growth. One from the mastoid cells showed the staphylococcus and the streptococcus. Twenty-nine days after the paracentesis a left mastoid operation was done. Culture from this ear had shown the pneumococcus, and 1 from the mastoid cells showed the pneumococcus, staphylococcus and the micrococcus tetragonus. In this case also there was a good recovery.

Three other patients, 1 adult and 2 children, had more or less tenderness over the mastoid with some œdema of the skin. These symptoms continued from two to six days, but were not considered of sufficient severity to justify opening the mastoid cells. Cultures from the ears had shown the staphylococcus, streptococcus and pneumococcus. Each of the 3 made a good recovery.

In another series of 69 cases, 45 of scarlet fever and 24 of measles, the ears were examined repeatedly, and in 19—10 of scarlet fever and 9 of measles—there was more or less involvement of the middle ear, varying from a slight congestion of the tympanic membrane with no subjective symptoms, to well-marked congestion accompanied by pain and bulging outward of the membrane. In 4 cases of measles the symptoms were severe enough to raise the question of paracentesis. Four of the 19 patients were adults; 7 complained of pain: 12 did not. All of the 19 recovered and in no instance was there either a paracentesis or rupture of the membrane.

It may not be out of place to mention briefly the general line of treatment followed. Whenever there was well-marked bulging outward of the tympanic membrane, accompanied by pain, a paracentesis was done and free drainage maintained. If the opening closed and the bulging and pain returned paracentesis was repeated. If the congestion of the membrane was very marked with evident thickening of the mucous membrane, frequent irrigations of the external canal with hot corrosive solution, 1-10,000, were used. After the acute symptoms were over and the discharge had decreased in amount, the middle ears were inflated by Politzer's method daily, until the membrane seemed normal.

In some instances, chiefly in adults, when pain was not very severe, instillations of hot water or weak corrosive solutions into the external canal every hour relieved the pain, and if the bulging of the membrane did not become marked, paracentesis was not done.

The importance of early paracentesis, both as affording relief from pain and preventing destruction of tissue in the membrane or other parts of the ear can hardly be over-estimated.

In comparing the series of cases of measles with that of scarlet fever, the two most striking differences are, (1) the greater number of mastoid operations, (2) the greater number of ear inflammations in adult patients in the former. Out of 51 measles patients, 6, or 11.7 per cent. required mastoid operation, while of 86 scarlet fever patients only 3, or 3.49 per cent. required it.

The number of scarlet fever patients over twenty years of age was 81, or 12.48 per cent. of the whole number; not one of these had middle ear inflammation. The number of measles

patients over twenty years of age was 156, or 45.75 per cent. of the whole number; 12 of these had middle ear inflammation. In other words, 23.53 per cent. of the ear inflammations in measles occurred in patients over twenty years of age, while there was not a single case in scarlet fever patients of the same age. Other points of difference are, (1) that in measles the ear symptoms, as a rule, occurred earlier in the disease than in scarlet fever; (2) that in measles the duration of the ear trouble was less than in scarlet fever; (3) that in measles pain was a constant symptom before paracentesis or rupture of the membrane, but in scarlet fever it was sometimes absent.

From the foregoing study the following conclusions seem justifiable:

1. Acute middle ear inflammation occurs frequently in both scarlet fever and measles.
2. It occurs a little oftener in measles than in scarlet fever.
3. In scarlet fever, though a frequent complication in children, it is rare in adults.
4. In measles, though more frequent in children than in adults, it is by no means uncommon in the latter.
5. It may begin at any time in the course of the disease.
6. All grades of severity are met.
7. Early treatment tends to shorten the course of the inflammatory process.
8. So far as danger to life is concerned it is not a serious complication.

A Source of Lead Poisoning in Newborn Infants.—Roussel (*Loire Médicale*) has found that certain secret remedies used in the treatment of fissures of the nipple contain acetate of lead. In the cases recorded the remedy was known as the "Cosmétique X.," and it was observed that when this was applied to the breast the infant soon began to suffer from colic and constipation. The vomiting of lead poisoning was probably represented by regurgitations which were not distinguishable from those met with in overfed infants. It was quite evident, when the cosmetic was analyzed, that the infants were the subjects of lead poisoning. Roussel, therefore, warns medical men against the use of applications the exact composition of which is unknown, in the treatment of mammillary cracks and fissures.—*British Medical Journal.*

AN OLD METHOD FOR THE HOME MODIFICATION OF MILK.

BY JOHN LOVETT MORSE, A.M., M.D.,

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The following directions for the modification of cow's milk for infant feeding were given to an American lady visiting in Paris by a physician of that city *between forty and fifty years ago.* After her return she acquired a considerable local reputation for her skill in feeding babies and succeeded in many instances in which physicians had failed. Finally, to save herself trouble, she had these directions printed for distribution among her friends. Through the courtesy of Dr. Edward Reynolds I have been fortunate enough to obtain one of the original copies. This method certainly antedates the patent of the Walker-Gordon Laboratory by many years and would seem to pretty effectually dispose of any claim to priority on their part. It is to be noted that these directions include the care of the cow and of the milk as well as the preparation of the food. An analysis of the formulæ given shows that the percentages obtained by them are not so very different from those in common use to-day.

FOR A CHILD FROM	FROM ORDINARY COW'S MILK.	TAKE TOP MILK.	ADD WATER.	MAKING FOOD.
2 to 10 days old	1¼ quarts.	1¼ gills.	3¼ gills.	4½ gills.
10 to 20 " "	1¾ "	1¾ "	4¾ "	6 "
20 to 30 " "	2 "	2½ "	6 "	8½ "
1 to 1½ mos. "	1½ "	3 "	6¼ "	9¼ "
1½ to 2 " "	1½ "	3½ "	7 "	10½ "
2 to 2½ " "	1½ "	4 "	7½ "	11½ "
2½ to 3 " "	1¾ "	4½ "	7½ "	12 "
3 to 3½ " "	1¾ "	5 "	7½ "	12½ "
3½ to 4 " "	2 "	5½ "	7½ "	13 "
4 to 4½ " "	2¼ "	6 "	7½ "	13½ "
4½ to 5 " "	2½ "	6½ "	7½ "	14 "
5 to 6 " "	2½ "	7 "	7 "	14 "
6 to 7 " "	2¾ "	7½ "	6½ "	14 "
7 to 8 " "	3 "	8 "	6 "	14 "
8 to 9 " "	——	8¼ "	6 "	14¼ "
9 to 10 " "	——	8½ "	6 "	14½ "
10 to 11 " "	——	8¾ "	6 "	14¾ "
11 to 12 " "	——	9 "	5½ "	14½ "
12 to 15 " "	——	9½ "	5¼ "	14¾ "
15 to 18 " "	——	9½ "	5 "	14½ "
18 onward	——	10 "	5 "	15 "

Eight ordinary tablespoonfuls equal one gill; six equal three-quarters of a gill; four equal half a gill, and two equal a quarter of a gill. It is best to have a gill cup.

BRIEF DIRECTIONS FOR FEEDING INFANTS.

The cow should be healthy; from four to ten years old.

Young milk is best for infants; a new milch cow is best.

When the milk is four or five months old, younger milk should be sought; it is much better for the child.

The cow should be well fed on grass or hay. No grain or meal or slops should be given to her. Grass or hay, water and salt should be her only food.

She must not be exposed to cold. Well housed in winter.

The milk must stand four or five hours in a cool place.

The *top-milk* should then be taken for the child.

It should then be mixed with cool water; this water should be soft and pure; hard water should be avoided.

White sugar should be used for sweetening it; it should be made a *very little* sweeter than ordinary cow's milk.

The child should be fed from a bottle.

The child should be fed once in three or four hours.

The milk, when prepared, should be kept in a cool place.

In warm weather it may be prepared twice a day.

Bottles, pans, cups, etc., must be kept sweet and clean.

The milk should be given blood-warm.

317 MARLBOROUGH STREET.

Intra-Uterine Infection with Measles.—A. Bartch (*Uges-krift fot Laeger*), refers to the general belief that new-born infants are seldom affected with measles, and reports a case in which it must have been acquired *in utero*. The infant was born on the day when the mother exhibited the morbillary rash, and at the time of birth had nasal catarrh, conjunctivitis, and cough. When three days old the eruption was out over the whole body, the temperature was raised, and the whole clinical picture of measles was presented. They ran a tolerably mild course, and ended in recovery after the lapse of six days.—*British Medical Journal.*

Clinical Memoranda.

TREATMENT OF PNEUMONIA BY THE ICE PACK.*

BY FLORENCE BRANDEIS, M.D.,

Louisville, Ky.

I was called to see a little boy eight years old on Friday of last week. During the extremely cold weather he had a cough, but had been attending school. On Tuesday preceding he came home with a chill, from which it took eight hours to get him warm. When I first saw him I found a decided frank pneumonia involving the entire right lung. No air was entering that lung, his pulse was regular, 140 to the minute, temperature 103 1-5° F. I immediately had ice bags applied, one over the chest and another just under the scapula. The temperature came down, the child went to sleep and the bags were removed; they were never left on longer than two hours at a time, but were used until the following Sunday. Ten days afterward I was able to let him get out of bed entirely convalescent. I saw him for the first time on Friday, and on Saturday afternoon resolution had begun; the temperature was reduced to 102° F. He did not have another rise of temperature and evidences of resolution were undoubted. The bowels were kept thoroughly open; a light diet was given; he received 1-120th grain of strychnine every four hours, and two drachms of whiskey every four hours alternately.

I realize that the treatment was begun rather late in the course of the disease. If I had been called to the child on Tuesday, it would have been a more favorable case for trial. The relief of the symptoms, however, was prompt and decided.

Dr. P. F. Barbour, in discussing the case, said that the author of the paper was to be congratulated upon her success in relieving this boy's symptoms, having been called to the case three or four days after inception of the disease, with such a high temperature. Pneumonia is not, however, as dangerous in the child as in the adult. Frank pneumonia has a low mortality in children. Broncho-pneumonia is a much more dangerous

*Reported to the Louisville Clinical Society.

disease at any age. Mays has tried to bring this method prominently before the profession as the proper treatment for pneumonia. From his statements pneumonia can be treated better with ice packs than in any other way, though it is a difficult matter to enforce their use with most patients. The ice pack will relieve the pain of pleuro-pneumonia quicker than hot applications. The speaker had never had an opportunity of trying it in private practice in a child as young as the one reported.

DR. W. F. BOGGESS.—I have used the ice pack in pleural pains, and it certainly relieved them much quicker than hot applications. The pain of pleurisy and pneumonia is sometimes persistent for twenty-four hours, and the suffering of these little patients is intense. One does not like to give them opium, and the ice pack in those cases in which I have tried it seemed to relieve the pain quicker and more successfully than anything else.

DR. EWING MARSHALL.—The treatment was instituted rather late to see such marked benefit from cold applications. If applied earlier we would have the right to expect greater benefit. If there had been complete consolidation it must have to a certain extent passed away, and the high temperature was a strong indication for the application of cold, and the ice pack probably answered the purpose better than anything else. I agree with others that pleural pain is relieved quicker by the application of cold than by the use of hot applications.

DR. CARL WEIDNER.—I have treated a few cases of pneumonia with the cold pack, either with ice or cold compresses frozen in ice, and while I am in favor of this method I have not been following it systematically, mainly because I have not been convinced that the other well-known methods would not succeed as well. Every case I have so treated has done as well, however, as by any method I have used. It is very much like the treatment of typhoid fever; if cold applications are to be used, they should be begun early. The result in this one case does not prove very much. We often see cases of pneumonia in children which terminate very quickly. In the application of cold in the treatment of pneumonia, one must have complete control of the patient. To give the method a thorough trial, one should have the patient in a well-equipped hospital. I have never regretted having used cold applications in the treatment of

pneumonia. I have, however, seen equally good results from other methods, and for that reason perhaps have not been systematic in its use.

DR. J. M. KRIM.—I have tried this method in several cases, not with ice, but with cold compresses, and have had almost universally good results. Unfortunately, however, the first time I tried it the patient died, and I received credit for killing the child with cold applications. But in the same family two weeks later another child was promptly relieved by the same method. I believe cold applications in the beginning to be the best treatment.

Ovarian Cyst in a New-Born Infant.—G. Durante (*Bull. Soc. Anat. de Paris; St. Louis Med. and Surg. Jour.*), has observed an ovarian cyst, apparently of the nature of an ovisac on the point of rupture, in an infant that died eight days after birth with symptoms of intestinal and hepatic disorder. The tumor was rounded, soft, incompletely fluctuating, and dark in color. It was of the size of a large nut and was attached to the upper border of the right broad ligament. The inner end of the ovary was applied to its surface, becoming continuous with it. Durante asked himself whether this was a true ovarian cyst, a real congenital tumor, or rather simply a large ovisac, congested and about to rupture in a manner like that seen in menstruation. The microscopic examination of the tumor inclined him to the latter view. The contents were simply red blood clot. The wall was made up of true ovarian tissue, containing ovules in different stages of evolution and more numerous near the attachment of the tumor to the ovary than over its free surface. Some were perfectly formed, others especially near the surface were still united together, indicating the last traces of Pflüger's tubes. The cyst had no epithelial lining but its connective tissue cells were seen insinuating themselves into the blood clot, which was therefore in process of being organized. Durante intends making serial sections of the contents of the cyst in order to discover whether any trace of an ovum is present. In the meantime he regards it as probable that it was an ovisac on the point of rupture due to an ovarian congestion of a menstrual kind.

UNUSUAL PERSISTENCE OF THE INFECTIVE PRINCIPLE OF MEASLES.

BY J. HOWE ADAMS, M.D.,

Overbrook, Pa.

It is the popular belief that measles is usually spread by direct contagion, and very infrequently through the medium of clothing, furniture, or a third person. Holt, in his book on "Diseases of Infancy and Childhood," cites a case reported by Townsend, in which one family moved into a tenement house on the same day on which it was vacated by another family, in which two children had suffered from measles, one of them fourteen and the other eighteen days previously. The apartments were not fumigated or disinfected, and although there were two susceptible children in the incoming family, they did not contract the disease. It is the belief of the profession that measles rarely, if ever, clings to apartments for weeks or months, as does scarlet fever. Many instances are on record in which the disease has been carried by a third person, but after all, this rarely happens, unless the contact of both the sick and the well child is very close, and the interval of time is very short. It is very seldom that measles is carried by a physician, who takes even ordinary precautions. In a case reported by Girom, the clothing of a patient is stated to have conveyed the disease, nineteen days after an attack, but Holt regards this as very exceptional.

In the case which I am about to report apparently the contagion remained in bedding for thirteen months after the disease disappeared, and reproduced the typical symptoms of measles. The circumstances of the case are as follows: A family of four children came down with the measles in a small town; from this attack they made a good recovery. A thorough disinfection of their clothes, bed clothes and apartments was carefully made. Thirteen months later the mother of these children was confined, and the baby happened to be wrapped, at birth, in a blanket which had been used by the children thirteen months before, but, which during the intervening time had been kept in a certain closet until it was called into use for the baby's needs. Ten days later, this ten-day-old infant came down with a typical attack of measles, including coryza, the suffusion of the

eyes, and the rash, and the fever. The rash was followed by the usual desquamation.

The attending physician made a careful examination of the village, and found that there was not a case of measles in the village at the time. Neither the doctor nor the nurse had seen any cases of measles for a long time, while of course, the mother and the child had not been out of the room at all. The source of the measles remained a mystery, until it occurred to the family that the baby had been wrapped temporarily in a blanket which had not been used for thirteen months, and then had been on the bed of a measles' patient. It had been steamed and cleaned and laid away for over a year.

Hygienic Treatment of Epilepsy.—Dr. Gelineau (*Treatment*), treats of the climate, occupations, etc., which a patient suffering from this affection should attend to, in order to ward off epilepsy as much as possible. With regard to the air which should be breathed, it ought to be in the country, as there is less noise, life is less exciting, and the air is much purer than in the towns. He should not live at the seaside, as attacks often become more frequent there, but in a sedative climate, such as Pau. The most suitable occupation is that of a farmer, because the air is pure, and the patient can employ himself in attending to his crops, vegetables, greenhouses, and flowers. The occupation of a shepherd is equally useful, and next to these in value to health are those of a basket maker, chair mender, rope maker, gunsmith, engraver, grocer, haberdasher, draper, and tailor, because none of these endanger life; while that of a glass maker and other employments which involve the use of fire, would do so. The patient must avoid crowds, popular assemblies, the theatre, and long sermons in a church, as these tend to excite the emotions and interfere with the tranquil existence which is so absolutely necessary. He should sleep on a bed raised only a little way from the floor, and the pillows should not be too soft for fear of suffocation during a fit. The clothing should be warm, and flannel worn next to the skin. Lastly, he should go to bed early, and at a regular hour every evening.—*Charlotte Medical Journal.*

Lecture

ON ANTENATAL THERAPEUTICS.

BEING THE CONCLUDING LECTURE OF A SERIES OF SIX ON ANTENATAL PATHOLOGY AND TERATOLOGY DELIVERED IN THE UNIVERSITY OF EDINBURGH IN FEBRUARY AND MARCH, 1899.

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The medical profession stands upon the threshold of antenatal therapeutics. It has been standing there so long that even the unbiassed onlooker must have begun to wonder when it intended to enter in, whether indeed it did not mean to turn away again from the open portal. Not but that there has been some entering in, of a retiring kind, unobtrusive, stealthy, passing unobserved by the spectator who is growing weary of watching. High time is it that an estimate be formed of the probabilities and possibilities of antenatal therapeutics. Even if the possibilities turn out to be small, vanishing almost, it will yet be better to know than to remain ignorant. Even in that part which deals with the treatment of the embryo and fœtus still *in utero*, it will be found that advances have been made and victories won. The subject is not so hopeless, although neglected, as is generally supposed.

CAUSES OF ANTENATAL MORBID STATES.

In the preceding lectures I have endeavored to give a survey of the field of research designated antenatal pathology. I have insisted that it is probable that in the antenatal period of life the same causes are at work as in the postnatal epoch; that in other words, the agencies which produce pathogenic and toxic effects when acting upon infantile and adult organisms lead to pathogenic and toxic effects when acting upon the fœtus, and to teratologic results when acting upon the embryo and germ. I have also pointed out that the phenomena of antenatal pathology are not of one kind only, but are many—sterility, single and double monstrosities, abortions, still-births, and mortinatality, twinning, fœtal diseases, many tumors, congenital debility, and tendencies dissolving heredity and leading to the later develop-

ment of tubercle, rheumatism, and a great number of neuropathic disorders—these and not monstrosities and fœtal diseases only are the protean phenomena of antenatal pathology.

There is good reason to believe that the morbid causes also are not one but many, and that all the toxic and pathogenic agents whose action in postnatal life is known may act before birth upon the developing organism. In this way the poisons, such as alcohol, lead, morphine, nicotine, and the rest, and the microbes and their toxins, such as those of tubercle and the exanthemata, and to some extent traumatism, enter into the arena of antenatal etiology, and have to be taken into account in the investigation of every instance of antenatal pathology.

THE ANTENATAL DEATH ROLL.

In many respects the field of research, which has been designated antenatal pathology, resembles a battlefield, rather perhaps a whole campaign. It is indeed a field thickly strewn with the dead, the dying, the wounded, the maimed. No estimate has ever been formed of the loss of life which takes place immediately after birth as the direct result of birth, during birth, from the traumatism of labor, in the fœtal period, in the embryonic epoch, and during germinal life; but I doubt whether the most pessimistic has an adequate conception of the loss of life in the earlier periods of antenatal existence.

THE POSSIBILITIES OF ANTENATAL THERAPEUTICS.

To revert to the comparison instituted between antenatal life and a campaign, it will be evident that the individual may require medical treatment after the battle, during the campaign, or before the war. For the wounded from the battle the Army Medical Department provides the ambulance corps, the field hospital, and the base hospital; but it does more, it endeavors to keep the troops healthy and in a healthy environment during the campaign, and by means of a good water supply and suitable food sends them into the fight fit to bear the strain to which they will assuredly be subjected. Yet more, before the campaign is begun the medical inspection of recruits is the subject of great care, and only such are selected as give promise of strong and healthy development; and when selected these are still further trained until they become almost perfect fighting machines. Like all comparisons, this one may be pushed too far;

but it may be said generally that the postnatal treatment of morbid states arising during birth, or before birth, corresponds to the field and base hospitals, being mainly reparative and palliative; that intranatal therapeutics and the treatment of the fœtus and embryo may be likened to the care of the soldier during the battle and in the whole campaign, being mainly preventive; and that germinal therapeutics resembles in its possibilities the work of the recruiting sergeant and the drill instructor being mainly selective and preparatory. The watchwords, then, in both cases, must be repair, prevent, prepare, and select with care.

POSTNATAL TREATMENT OF ANTENATAL AND INTRANATAL MORBID STATES.

It may be thought to be almost a work of supererogation to enter into details regarding what may be done after the birth of the infant to remedy the ills with which it comes burdened into its extrauterine existence, but it is doubtful whether the medical profession realizes how much may be done and is done in this direction.

As has been said, it is in the domain of surgery that the postnatal treatment of antenatal morbid states has secured its most noteworthy triumphs. Club foot, cleft palate, hare-lip, phimosis, imperforate hymen and anus, congenital dislocation of hip, shoulder, and knee, torticollis, spina bifida, congenital fistulæ, cysts, and tumors of various regions, umbilical and other herniæ, extroversion of the bladder, atresia of urethra, vulva, or vagina, epispadias, hypospadias, nondescent of the testicle, vulvar anus, supernumerary digits, syndactyly, congenital absence of tibia, fibula, and radius, and many other conditions quite as markedly antenatal in origin, are every day taxing the ingenuity of the surgeon. In the repair of some of these deformities surgery has been quite successful; in others, such as ectopia vesicæ, congenital dislocations, and absence of fibula or radius, only a moderate degree of success has been registered. Even in the latter, however, there has been progress.

The results obtained by the physician in his treatment of antenatal morbid states, although less brilliant than those of the surgeon, have yet been sufficiently good to encourage further efforts. It is unnecessary to do more than refer to the beneficial effects of medicinal treatment of the manifestations of congenital syphilis, and the value of thyroid feeding in cretinism is well

known. It must, however, be confessed that little success has as yet attended the medical treatment of the congenital skin diseases, and ichthyosis, tylosis, sclerema, hypertrichosis, hypotrichosis, nævus neuroticus and congenital elephantiasis must still be looked upon as nearly intractable. The ordinary form of jaundice of the new-born yields readily to treatment of the simplest kind, but the grave form does not yield at all. Umbilical hæmorrhage usually requires surgical interference, and that of a very active kind, to control it; congenital heart disease handicaps the individual for life, and congenital dropsical states are rarely amenable to the drugs of the physician.

On the other hand, wonderful results have been obtained in the branch of medical practice that deals with congenital defects and diseases of the nervous system. Witness the effect of medically regulated educational training upon the congenitally blind, and deaf and dumb, and idiotic. The combination of medical supervision with educative methods has almost made the blind to see, the deaf to hear, the dumb to speak, and the idiot to understand. This is no random statement, for everyone knows what the congenitally blind, deaf, or dumb can accomplish, notwithstanding his infirmity.

With regard to idiocy, the following sentence contains a report of the results of twenty years' work in its alleviation: Of patients discharged after full treatment, 10 per cent. are self-supporting, whilst another 10 per cent. would be so if they had obtained suitable situations, and about 20 per cent. were reported as useful to their friends at home.

In one direction, however, the treatment of idiocy has not been altogether encouraging. I refer to craniectomy for its microcephalic form. The operation is not uncommonly followed by evident and immediate improvement, which continues up to a certain point, and then all that has been gained is too often steadily lost. Blanc is probably right when he says that in primitive microcephaly the arrest in brain development has occurred before the fourth month of intrauterine life, and that, therefore, the division of the cranial vault does not reach the root of the mischief; it is not the cranium but the brain that is at fault. In the cases that are developed later the operation is more hopeful. In this relation it may not be out of place to refer to the treatment of cranial depressions in the new-born by trephining. Sometimes the natural resiliency of the bones restores the normal form of

the head, and obviates symptoms; but this good result does n o always follow. In a case of which Dr. D. D. Jennings (New York) kindly sent me the notes, the use of forceps had produced a distinct depression of the left frontal bone; pneumatic suction was first tried, and, that failing, the trephine was employed and the bone elevated. The child made an uneventful recovery. It seems to me that this mode of treating congenital depressions and fractures of the cranium might be extended with advantage.

INTRANATAL THERAPEUTICS.

Intranatal treatment, under which I include the management of the infant during labor both in the uterus and in the vagina, is entirely in the hands of the obstetrician. It is mainly preventive in character. There is, for instance, the danger of septic or gonorrhœal or syphilitic infection affecting the eyes or mouth or lungs; this danger may be almost entirely averted by the prophylactic vaginal douche during labor, and by the cleansing of not only the eyes but also the nose and mouth of the child immediately after birth. Prophylactic douching in labor for the sake of the infant is a procedure the full value of which has not, I think, been fully appreciated as yet. Again, the obstetrician has it in his power to prevent tetanus neonatorum by the application of surgical cleanliness to the dressing of the umbilical cord, and by the same means it may be confidently anticipated that erysipelas neonatorum and omphalitis with defective closure of the umbilical ring will be banished from practice.

The rational treatment of the physiological flow of milk from the breasts of the new-born will prevent many of the cases of mammary abscess due to the mistaken notion in midwives' minds of the necessity of "breaking the breast strings." The almost complete banishment of ergot until after the infant is born has already doubtless saved many infantile lives, and the rapid delivery of the second twin is, I believe, a step in the right direction.

Further, every improvement in obstetrical instruments and manipulations is beneficial to the fœtus. The better the forceps and the more correctly it is applied in the right cases the greater will be the infant's chance of being born alive and free from intracranial hæmorrhages and facial paralysis.

ANTENATAL TREATMENT: INTRAUTERINE.

Many misconceptions have gathered round the subject of the treatment of the infant still *in utero;* and while some have greatly exaggerated the possibilities, others have greatly minimized them. From some of the statements that have been made by enthusiastic antenatal therapeutists, it might be imagined that drugs could be passed directly into the unborn infant as one pours a liquid from one bottle into another. On the other hand, it would seem as if those who are sceptical regarding antenatal treatment had come to believe that the fœtal economy was absolutely separate from and independent of the maternal. Now, as is often the case, the truth lies somewhere between these two extremes.

It is possible to bring medicinal and hygienic influences to bear upon the embryo and fœtus while still *in utero*, but it is absolutely necessary that these shall act first upon the mother; antenatal treatment is primarily maternal; it must be so.

A very superficial study of the physiology of fœtal existence serves to convince the investigator that the only certain way to reach the fœtus is through the placenta, for it cannot be regarded as proven that the amniotic route, as it may be called, is open. Now it has been already pointed out that the mechanism of transmission of medicinal substances through the placenta is as yet imperfectly known, and it is not even certainly known which minerals pass through into the fœtus and which do not. The knowledge that we possess, although small, is nevertheless valuable, and can be turned to practical account. If there is one thing that is certain about antenatal therapeutics, it is the beneficial effect upon the unborn infant of the administration of mercury to the mother suffering from syphilis. It might at first sight be regarded as almost certain that it would be found that mercury passed freely into the fœtal economy. Experiment, however, has shown that mercury is apparently transmitted not at all through the placenta but is entirely stored up in its substance. How, then, can the beneficial result be accounted for? Simply by bearing in mind that the placenta is the most vital and also the most vulnerable organ that the fœtus possesses, and that if it can be kept healthy the rest of the fœtal structures will also benefit. The mercury, therefore, cannot be located in a better position than just in the placenta.

Hitherto the treatment of the syphilitic fœtus has been simply an incident in the general treatment of the syphilitic mother; but E. Fournier has recently advocated the administration of mercury to the mother who is apparently free from syphilis not for her own sake, but in order to influence the fœtus in her uterus, the victim of syphilis of paternal origin. This is a step in the right direction, and might be well imitated in cases of tuberculosis, malaria and lead poisoning in the father. It may be suggested that the giving of quinine to the mother of a malaria stricken fœtus will lead to abortion. It is, of course, true that this result is possible, but in cases in which mother and fœtus have suffered from ague quinine has not proved dangerous, and it might at any rate be tried in the fœtal malaria of paternal origin.

Besides mercury and iodide of potassium and quinine, potassium chlorate has been found of benefit in cases in which there has been a tendency to the recurrence of abortion and premature labor. It is spoken highly of by Sir James and Professor A. R. Simpson and by Mr. Lawson Tait. My experience of it is confined to a case in which a woman had on at least two occasions given birth to dropsical fœtuses, and in whom the regular ingestion of the drug along with iron during the whole of her next pregnancy apparently enabled her to carry her infant to the full term, but did not prevent it being again dropsical. I also administered it twice to a patient who had aborted more than once, with the result—possibly a coincidence—that on each occasion when she was taking the chlorate she not only carried a living child to the full term but to fully a month beyond it.

The pregnant woman should be protected as far as possible from the risk of infectious maladies, both for her own sake and for the sake of her unborn infant. It has been shown that not only may a pregnant woman suffering from small-pox, scarlet fever, measles, erysipelas, and the like, transmit the same disease, although not necessarily the same form of it to her infant *in utero*, but she herself may escape infection through previously-acquired immunity or idiosyncrasy, and yet the fœtus in her womb may be infected, and be afterwards born with the traces or the effects of the malady upon him. It must, therefore, be laid down as a fact that it is dangerous for the infant *in utero* for his mother to nurse a brother or sister in an attack of measles or scarlet fever.

There are certain trades which must be regarded as dangerous both for the pregnant woman and her unborn infant. She ought not to be allowed to run the risk of lead or copper poisoning, and, since abortion is very common among the workers in tobacco factories, working in them also must be looked upon as dangerous. The same remark applies to working in match factories. The danger of these things is recognized as far as the woman is concerned, but I am not sure that it is sufficiently so as regards the fœtus.

It is hardly necessary for me to refer to the pernicious effects of excess of alcohol taken by the pregnant woman upon her infant. If there is one thing more than another that experimental fœtal pathology and teratogeny has shown, it is the evil effects of the alcohols and essences. Their effects are not, however, stereotyped, and it cannot be said that the child of a drunken woman is of necessity a drunkard; but it can usually be traced that he is an individual of weak power of resistance along one line or another—it may be along the line of inability to resist the temptation of alcohol—or to one form of disease or another.

PUERICULTURE.

A good deal has been written lately regarding this, and there can be no doubt that the better the hygienic conditions that exist during pregnancy the better developed and healthy will be the offspring. It has, however, been shown that the stronger infants of the women who rest during the last three months of pregnancy as compared with those of mothers who have to work up to the very day of delivery are probably largely due to the fact that in them labor comes on at the full term and not prematurely.

As to maternal impressions during pregnancy, it need only be said that it is inadvisable for the mother to be subjected to unpleasant emotions, just as it is well for her to have the *mens sana in corpore sano;* but she ought not to be allowed to brood over disgusting or terrifying sights in the belief that scientific medicine regards it as in the least likely that her unborn infant will bear upon him the simulacra of such.

From all that has been said, it will be evident, therefore, that intrauterine prevention and cure are founded upon a knowledge of fœtal and embryonic physiology and of the causes of

diseases and deformities and monstrosities. The whole subject is much hampered by the difficulty of diagnosis; but it must always be borne in mind that the diagnosis to be of much use would have to be made long before the sixth month of pregnancy. The most valuable guides we possess are the knowledge of the state of health of the parents and the fact that fœtal morbid states have a tendency to repeat themselves in the same patient. All this simply emphasizes the conclusion already formulated that antenatal intrauterine treatment must be mainly preventive.

ANTENATAL TREATMENT: INTRAGLANDULAR.

Therapeutics in the earliest period of germinal life, when the future organism is represented by two specialized cells, a sperm and an egg cell, must of necessity be both paternal and maternal, and it must almost equally of necessity be mainly preparatory and selective.

There is not perhaps at the present day so much need as there was in the middle of the last century for the unborn babes to make their formal petition to the Censors of the Royal College of Physicians against the cruel mauling to which they were subjected by "hooks, pincers, and other bloody instruments," but there is assuredly some cause for an intrauterine protest against the lighthearted and foolhardy way in which all sorts of individuals rush into the most onerous and most responsible of contracts which men and women are capable of concluding in this world.

A PETITION FROM THE UNBORN.

I can well imagine the unborn infants demanding their rights in some such way as the following: We, the unborn, do here humbly set forth our right to be well born. We do not demand that we shall be born of wealthy parents, for we know from the sad experience of others once unborn like ourselves that millions of money without an hour's complete health to enjoy it is gall and bitterness. Neither do we ask that we shall be born of a titled stock; we prefer good blood to the much vaunted blue blood with a notorious deficiency in white corpuscles. We do not petition for parents with a hereditary history free from all blots and blemishes, for we know that such are not to be had; it will suffice us if we are provided with four long-lived grandparents, and with a father and mother who, in

the words of one of the post-natal poets, have "self-reverence, self-knowledge, self-control; these three alone lead life to sovereign power." We ask to be protected from the fathers who in the very spring time of their lives, when they ought to have been sowing health and strength, were sowing disease and death, "wild oats" they called them, with a miserable attempt at self-deception. We object to springing from body cells weakened by abuse and toxic and pathogenic agencies. From such fathers we pray that we may be spared, for well we know that their whining repentance means little, and that when we grow up with the signs upon our bodies and in our minds of a parent's fall, they will not look upon us with pity, but with loathing, even as we also look upon them. Neither do we wish to have anything to do with the mother—we blush for her—who doses herself and us with noxious oxytocic drugs at the second and third month of pregnancy in order that she may be saved from what she regards as the irritating interference and exasperating suffering of child-bearing. Such conduct makes our pulses throb with righteous indignation from the foramen ovale to the very tips of our chorionic villi. We confess that we are absolutely unable to understand the attitude of a mother who will do such a thing "avec le cœur léger," and who will on another occasion shed floods of tears and become hysterical with grief over the dead body of a month-old baby, or, *horribile dictu*, of a favorite dog. Some of us hope to be mothers ourselves some day, and we trust we shall not be so illogical, not to say wicked, as to act in such a manner. We do not prefer to have as parents individuals who are tuberculous or predisposed to tuberculosis, who are congenitally deformed, or who belong to a stock in which cancer and insanity have been frequent incidents; but we do not absolutely refuse to admit their rights to paternity and maternity so long as they are themselves clean-living and right-thinking folk, for we have a great belief in the tendency of the germ-plasm to return to right physiological paths if it only get a fair chance. We think that much of the evil that is done to the germ in one generation may be undone in the next, but of course with great difficulty, for *facilis descensus averni, sed revocare gradum hic labor hoc opus est.* We do not particularly object to having first cousins as parents when they both have a clean bill of health, but we do not wish to be the public demonstration of the intensification of morbid

processes which will result if they have not. Finally, we formulate our claim and state our right to be engendered by self-respecting individuals, to be conceived in soberness, and to be developed under healthy conditions of intrauterine life.

I do not think that these claims of the unborn can be regarded as excessive. At the same time I think that all attempts to regulate marriage by law in the way that has been so often suggested of having a sort of bureau of inspection of candidates for matrimony must be regarded as premature at least, if not found actually on a wrong principle. At present it must be confessed that public opinion judges of the suitability or unsuitability of a proposed marriage very much by the amount of money the young couple will have to live upon. It would be better if a basis of health were to take the place of a basis of wealth in the public mind.

What, for instance, has the profession to teach the public on the question of marriages of consanguinity? This matter has been rendered most uncertain by the confusion which has been introduced through the mixing up of two very different states—namely, the marriage of near kin or incest and marriage of consanguinity or of cousins. In the former case there can be no doubt of the evil effects, and every breeder of domestic animals will support this assertion; but the marriage of cousins is a different matter. It has been stated that such marriages result in sterility, abortions, congenital deaf-dumbness, idiocy, retinitis pigmentosa, albinism, and such malformations as polydactyly and ectrodactyly. Now, it does not seem that consanguinity *ipso facto*—that is, without the existence of traces of pre-existing degeneracy in the contracting parties—increases the risk of these diseases and anomalies. Féré goes further, and says that in good families it is to be sought for, not avoided; but the medical man will be well advised if he refrain from proffering such advice unasked.

Another question that the profession must be prepared to answer is, To what extent may marriage into a good stock correct the tendency to degeneration existing in a bad stock? The case of the marriages of the imperial house of Russia has been cited by Dr. Ireland. Perhaps the safest view to take of such unions is that the good risk to lose more than the bad risk to gain (Féré).

The consideration of what constitutes a good marriage can-

not be concluded without a reference to the spectre of morbid heredity, so obstrusively prominent in modern literature of the Ibsen-Zola present-day novelist type. There are some—they constitute the minority, I think—who treat this matter lightly. For them the question has no terrors; every man has his chance.

> Years roll'd on years successive glide,
> Since first the world began,
> And on the tide of time still floats,
> Secure, the bark of man.

But there are others, and their number in these days is great, to whom morbid heredity is a spectre that will not be laid. It looks at them out of their children's eyes, they see it in the flush upon a daughter's cheek, they hear it in the night shriek of their rachitic offspring. All day long it stalks through the house, and in the still hours of darkness the rustle of its garments (cerements are they not?) is to be heard. An unreasoning terror seizes them, and they say like one of old time: "Fear came upon me, and trembling, which made all my bones to shake. Then a spirit passed before my face, the hair of my flesh stood up; it stood still, but I could not discern the form thereof; an image was before mine eyes, there was silence." They are paralyzed, are these fearful ones, and a gloomy fatalism overpowers them. They are for ever talking of the relentless anger of outraged Nature; they constantly speak of the visitation of the sins of the fathers upon the children, and they generally mean that the sins of their father are being visited upon them, and rarely that they fear that their own sins will be visited upon their children.

To all such I preach the gospel of hope. I do not require them to take the message on trust, but I simply ask them to look around with eyes that observe. I call upon them to stop focussing their gaze upon the dark places in the picture, and to give a little attention to the bright ones. There is not an all-pervading gloom, there are flashes of light here and there already, and they grow more numerous with the looking. Those who are so fearful of morbid heredity begin to realize that the most hereditary thing in the world is the normal, not the abnormal; that health is transmitted as well as disease; that even where the past history of the family is bad, the clean livers have handed something to their children that is better than what was handed on to them.

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

JULY, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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CHOREA.

The nature and causation of this peculiar disorder has long been a matter of especial interest to the profession. The disease has been very carefully observed and much has been written upon it, but the divergence of opinion upon many points seems to be almost as great as it was years ago. We expect divergence of opinion in medicine, but here we find it in an exaggerated degree. A prominent writer has recently reported chorea as due to fright in over 50 per cent. of his cases and could obtain a history of rheumatism in only eight cases in seventy. Another found fright as a cause in but six cases in eighty, and still another in the same city in fifteen cases in eighty. The one believes that rheumatism is an active causative factor in a large proportion of cases, the other that there is no evidence of cause and effect, though the two diseases often coexist.

It is impossible to believe that in one set of cases fright was a cause in over 50 per cent. and in another but 7 per cent.; that in one, rheumatism was a cause in 11 per cent.; in another in 73 per cent. Such different interpretation of virtually the same cases and facts leads inevitably to the belief that some radical error exists, either in methods of observation or in the power to generalize and draw correct conclusions from data.

In studying the work of various authors one soon comes to the conclusion that these widely differing opinions result largely from differences in opinion regarding rheumatism in childhood. One observer is inclined to lay much stress upon fright, injuries, and nervous conditions and to ignore the importance of rheumatism. He seems inclined to call nothing rheumatism that is not marked by distinct articular inflammation, a position that is now considered untenable by most workers in pediatrics, who almost unanimously agree that rheumatism is a disease that manifests itself very differently in the child and in the adult. A condition which in the adult would be considered subacute and unimportant, in the child is common and may be of the utmost gravity.

THE PATHOLOGY OF CHOREA.

In a recent article upon the subject of chorea, in the *Edinburgh Medical Journal*, Dr. J. Purves Stewart very aptly remarks that chorea has a clinical rather than a pathological existence. Very little is known with regard to its essential pathology, although various appearances have been described in autopsies on fatal cases. Amongst other conditions may be mentioned hyperæmia of the brain, occlusion of arterioles by thrombosis or by embolism, and minute perivascular hemorrhages in the brain and spinal cord. But an insurmountable objection to the acceptance of any of these as the essential cause of the disease, lies in the fact that any or all of these changes may be absent, and the brain, cord, and nervous system may appear absolutely normal—so far, at least, as the present methods of neuro-pathology enable one to judge.

The nature of the choreic movements points strongly to their origin from some irritable condition of the motor cells of the cortex, and the frequency with which the symptoms are confined to one side of the body still further corroborates such a hypothesis. We seem driven to regard the disease as a functather than a structural disorder of the nerve-cells, al-

though there can be little doubt that, underlying all so-called "functional" disorders, there must be some molecular and chemical changes in the nerve elements. But the precise nature of such changes is a problem as yet unsolved, and when it is solved it may be by the physiological chemist rather than by the histologist. That the disease may be due to a toxin appears not at all improbable.

The relation of chorea to rheumatism is discussed by Dr. Stewart at considerable length and he believes that that relationship is close. He refers particularly to fright or shock as a cause of the disease. Out of 41 of his cases, 15 gave a history of some fright or mental shock. But of these 15 patients, 3 had previously suffered from rheumatic fever, and 6 had signs of mitral disease. One little patient was said to have acquired the complaint by imitating another child afflicted with chorea, but in this case the patient developed joint-swellings during the attack. Two other patients had a very strong family history of rheumatic fever. Only 3 of the cases attributed to nervous shock, therefore, were free from evidences of rheumatism, either in themselves or near relatives. A similar result is usually obtained whenever cases of this character are carefully analyzed.

THE RELATION OF RHEUMATISM AND CHOREA.

We recently had occasion to study this subject in 119 cases of the disease. Thirty-one of the patients were males and 88 were females. The youngest was four years of age, the oldest fourteen years. Six were under five years; 62 between five and ten years; 51 between ten and fourteen years. More cases developed during April, May and June, than during any other quarter of the year.

A personal history regarding chorea and rheumatism was complete and satisfactory in 88 cases. Antecedent arthritis was found to have been present in 31.8 per cent. of the cases of chorea; concurrent arthritis in 20.2 per cent., 10 per cent. hav-

ing no previous rheumatic manifestations; and subsequent arthritis in 13.6 per cent., 5.7 per cent. having had no previous rheumatism. Rheumatism appeared in some form either before or after the chorea in 54.5 per cent. of all the cases.

Among these patients, those who developed rheumatism after the onset of the chorea were of particular interest. In 12 cases the first attack of rheumatism appeared at a period greater than one week subsequent to the onset of the chorea. Of these, 5 had given no previous rheumatic history. The time of development was twelve days, six weeks, two months, three months, and six months after the chorea. This shows very clearly that unless patients are watched for long periods of time, the rheumatic element may be overlooked.

The relation between rheumatism and chorea is certainly a very close one and the question arises whether there is any chorea without rheumatism. Is there such a disease as fright chorea or hysterical chorea? All the evidence clearly points to the fact that there is, in the same sense that there is a rheumatic chorea.

Study of the disease leads strongly to the belief that there is some underlying predisposing cause aside from rheumatism, fright, or hysteria. A dozen children have rheumatism and no chorea. The thirteenth has a mild attack of rheumatism and develops a severe chorea. The children in certain families are almost certain to have chorea if they contract rheumatism. Ten children are frightened by a dog and never have chorea; the eleventh at once develops a nervous disorder which increases in severity for two weeks and lasts for months.

That there is some predisposing neurotic element underlying all this seems certain. What it is we do not know. Not every one exposed to the bacillus of tuberculosis contracts that disease. That indefinite factor we call predisposition is lacking. Not every child suffering from rheumatism or subjected to fright has chorea. He is not predisposed to it. We may safely class rheumatism, fright, hysteria, excitement, pregnancy, not

as all-powerful agents for the production of this disorder, but rather as exciting agents for the production of the disease in subjects predisposed to it, the most universal and potent of which is rheumatism.

THE SYMPTOMS OF CHOREA.

In well-developed cases the symptoms of chorea are unmistakable. When the disease is mild, it is frequently overlooked, and at the outset the diagnosis is sometimes difficult. The disease consists of involuntary, irregular, and inco-ordinated movements of any muscle or group of muscles of the body. The movements are not under control of the patient's will, and are usually made worse by efforts to control them. They are rarely present during sleep, and are increased by excitement, fatigue, or embarrassment.

The choreic movements more commonly begin in the muscles of the hands and face. Children are sometimes punished for dropping things and making grimaces. In the hands slight restlessness of the fingers will be observed. If the hand is taken in that of the physician, the choreic movements may often be felt when they are not clearly perceptible to sight. If the child is directed to extend the arms and hold the hands perfectly still, the choreic movements are made more apparent. General restlessness of the body is also a frequent accompaniment of slight chorea. The child changes from one foot to the other and moves constantly.

The tongue frequently furnishes valuable evidence, for it usually shows choreic twitchings, even when other movements of the body are slight. The movements of the tongue are slow, coarse, and often rhythmical. The child is apt to open the mouth wider than is necessary, and the face is apt to assume the appearance of a grimace. In rare cases the uvula may be seen to move irregularly. In more severe cases the tongue is sometimes caught between the teeth.

Weakness of the muscles to a greater or less degree is almost a constant symptom of chorea. This is sometimes so marked that the term *paralytic chorea* has been proposed. A special term seems unnecessary, as a certain amount of weakness is always seen, in some cases becoming more marked. The weakness is sometimes so great and the choreic movements so slight that the child is brought to the physician for paralysis, and occasionally he may be misled, unless he makes very careful examination of the case. We have seen a case of severe chorea in which paralysis was the most prominent, in fact, almost the only initial symptom. Marked choreic movements did not appear until the fourth day after the child became almost helpless.

The mental condition of the patient also, as a rule, undergoes marked change. The child becomes irritable and cross, and cries at the slightest provocation. We have seen cases of recurrent chorea in which the advent of the attack was foreseen by the mother by the irritability of the child and a change in its disposition.

Speech in such cases is particularly liable to be affected. Indistinctness and thickness of the articulation is frequently an early symptom. This is due not so much to true aphasia as to inability to control the organs of speech.

The heart should be examined in every case of suspected chorea, for murmurs sometimes develop early, even in cases where the choreic movements are slight. As confirmatory evidence, also, anæmia is a symptom of some importance, for, as a rule, the choreic child is below the average standard physically. A history of previous attacks, as well as a personal and family history of rheumatism is also very suggestive.

In doubtful cases every means should be used to make an early diagnosis, for early treatment is of paramount importance. Although the disease is rarely fatal to life, it must be regarded as a grave misfortune to befall any child, and its detection and prompt treatment is encumbent upon the physician.

Chorea is another rheumatic manifestation common in children, but its outbreak is not of such serious significance as regards danger to the heart as are nodules and exudative erythemata, nor is it in all cases possible to prove its rheumatic origin. Frequently, valvular murmurs are developed during an attack of chorea, and these may be due only to temporary cardiac dilatation or anæmia, and may disappear when the patient regains his health; but they also may be due to concomitant endocarditis, about the rheumatic origin of which there is no doubt, and serious valvular lesions may result. When endocarditis does arise in children suffering from chorea, it is not usually associated with or followed by pericarditis, as is the case in those where nodules are present; happily, pericarditis is not a very common complication of chorea, but when it does arise the prognosis is very grave. Though, however, a large proportion of children escape heart mischief during an attack of chorea, it must not be forgotten that chorea is an evidence of the rheumatic taint, of which the next manifestation may be cardiac inflammation.—*Broadbent, in the Edinburgh Medical Journal.* 1898. Vol. xlv. No. 515.

Irrigation of the Bowel in Enterocolitis.—Lichty (*Med. News*) says: In cholera infantum and acute enterocolitis irrigation of the bowels with pure water is of such importance that, aside from proper dietetics, all other methods of treatment fall into insignificance. It is the most rational, and I think the most successful treatment which can be employed. It is very easily instituted. The nurse should be instructed to put on a rubber apron, and to take the child in her lap, laying it upon its abdomen; the lower end of the apron should be placed in a suitable receptacle to receive the wash water and excrement. The nozzle of a fountain syringe is then inserted in the child's anus, and the water allowed to flow continuously under slight pressure. Experiment has shown that there is no danger of rupturing the bowel, since the rectum in a child will expel the water after a certain pressure is attained. The child, after two or three treatments of this kind, will, in nearly every instance, be relieved.—*Buffalo Medical Journal.*

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The first volume of "Keating's Cyclopedia" appeared ten years ago. We had occasion a few months since to refer to the epoch in pediatrics which its publication marked. It was, at that time, the greatest work which had been done by pediatric writers, and even now, in many regards, it stands as by far the greatest and most creditable work that has been done in that department of medicine.

Great changes have taken place in medicine during the past ten years and no department has made more real and substantial advancement than has pediatrics. No other department has produced a mass of literature of more substantial merit. In view of these changes it seems quite fitting that a supplemental volume should have been published to bring up to recent standards the work of ten years ago.

The greatest advances during the past decade have probably been in the direction of pathology and etiology. The whole science of serum therapy has been created and developed within that time. The results, in certain directions, have been so startling and so far beyond what the most vivid imagination might have portrayed even five years ago, that works of that date require complete rewriting. It has evidently been the effort of the editor of the present volume to in fact accomplish that purpose. The work in its design is somewhat peculiar. While the volume covers quite completely the field of pediatrics and in itself forms a treatise upon that subject, the articles are mostly written with especial design of showing the advances that have been made since the publication of the original. Recent acquisitions to our knowledge, therefore, are made very prominent. While many of the articles are complete monographs upon the subjects upon which they treat, others take for

granted certain phases which are well covered in the original volumes and devote the space more particularly to recent acquisitions.

The list of contributors is a large one. It contains a large number of those found in the original list, but many new names appear. The number of authors and of articles is too great to admit of individual mention in this place. On the whole, it may be said that the volume is a most creditable one. It materially strengthens the original cyclopedia and brings it well up-to-date. No studious owner of the original volumes will now consider them complete without the addition of the present volume. In binding and print it is a duplicate of the originals, and highly creditable to both editor and publisher.

Diabetes Mellitis in a Ten-Year-Old Girl.—Haushalter (*Annales de Médecine et Chirurgie Infantiles,*) reports a most unusual case of diabetes in a young girl aged ten years. The glycosuria amounted on an average to about 122 grammes of sugar a day, during an irregular observation of seven months. Polyuria was not excessive. The subjective manifestations consisted of thirst and polyphagia, which were not marked. Various abscesses developed on the lower extremities, the disease progressed, the child became marantic, and died at the end of about two years, despite all treatment.—*University Medical Magazine.*

Otitis Media in Nurslings, and its Consequences.—Steiner (*Prag. Med. Wochens.*) has studied the material at the children's clinic in Breslau, and divides the cases into four groups: (*a*) fairly well nourished or slightly dyspeptic infants who acquire otitis media; (*b*) infants who develop otitis in the course of a severe gastro-enteritis which is cured; (*c*) those in whom the gastro-enteritis is not cured but becomes chronic; (*d*) those in whom meningitis develops by way of the ear infection. His conclusions are: that otitis may begin with such mild symptoms as to be overlooked, or else with moderately severe general disturbances; that chronic gastro-enteritis and its resulting atrophy are not due to otitis media, but that the otitis forms a frequent complication of this disease; that otitis media demands serious consideration in infants, because it may cause suppurative meningitis or become chronic and later spread so as to involve the cranial bones or the brain.—*American Journal of Obstetrics.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, May 11, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

A CASE OF SUBACUTE PHOSPHORUS POISONING IN A BABY.

DR. HENRY KOPLIK reported a case of this kind, occurring in an infant of ten months, as a result of an unusual susceptibility to very small medicinal doses of phosphorus. The infant had been brought to him because of marked anæmia and an enlarged spleen. Examination had shown advanced rickets, moderate enlargement of the liver, and enlargement of the spleen down to the umbilicus. There was no fever. The child was ordered the officinal oil of phosphorus in quantities representing a dose of $\frac{1}{600}$ of a grain of phosphorus three times a day. For about two weeks it seemed to do well on this medication; then it suddenly became fretful and feverish, and had diarrhœa. Very soon after this the lymph nodes of the back of the neck became enlarged, a small spot of eczema appeared on the scalp, and a petechial eruption appeared here and there on the extremities.

The phosphorus was then discontinued, but within five days there were numerous subcutaneous hæmorrhages, with increased enlargement and induration of the nodes of the neck and about the angle of the jaw. On incision into these masses, a little pus was evacuated, and the nodes, on section, presented a lardaceous appearance. Within an hour after the operation there was a free parenchymatous hæmorrhage from the wound, and in the course of the next few days, epistaxis and bloody stools. The child died of exhaustion.

At the *autopsy* the abdomen contained a slightly turbid fluid, cultures from which were negative. There were punctate hæmorrhages on the peritoneum; the mesenteric lymph nodes were enlarged; the spleen was very large and friable; the liver and kidneys were intensely white, looking as if they had been soaked for a long time and hardened in alcohol. The markings of the kidney were barely visible, and the organ, on section, was yellowish-white. Microscopical and bacteriological exam-

ination showed intense fatty degeneration of the liver, parenchymatous degeneration of the kidney and an absence of bacterial growths in the spleen. The microscopical examination of the blood had already excluded leucæmia and malaria. The speaker said that with the exception of the enlargement of the cervical lymph nodes, the clinical picture presented by this case was that of phosphorus poisoning, and by a process of careful exclusion this was the diagnosis that had been reached.

ACUTE INFLAMMATION OF THE EAR COMPLICATING SCARLET FEVER AND MEASLES.

DR. CHARLES H. MAY read a paper with this title. (See p. 489.)

MASTOID COMPLICATIONS IN OTITIS OF THE EXANTHEMATA.

DR. EDWARD B. DENCH read this paper. He said that a postauricular swelling was often the first evidence of inflammation of the ear, when occurring in connection with la grippe. As soon as physical examination made it evident that there was an accumulation of secretion in the tympanic cavity, a free incision should be made in the tympanic membrane. The point of the knife should be kept in contact with the bone, and carried upward so as not only to incise the membrane but also deplete it. When tenderness first developed in the region of the mastoid it was his practice to apply a Leiter cold coil, but not for more than forty-eight hours, as its prolonged use was likely to lead to serious mistakes. When a postauricular abscess was present, it was not sufficient, even in young children, to make an incision; the bony structure should be laid open. It was well to expose the tympanic ring in children by a downward extension of the incision, for unless this was done there was danger of entering the middle cranial fossa.

OTITIS OF THE EXANTHEMATA FROM THE STANDPOINT OF THE PEDIATRICIAN AND GENERAL PRACTITIONER.

DR. J. HENRY FRUITNIGHT presented a paper with this title, based on his experience with five thousand cases of the exanthemata. He said that otitis was especially prone to develop where there was much congestion or inflammation of the mucous membrane of the throat. The attack could often be averted, and the sense of hearing conserved by prompt treatment at the outset. Syphilitic and tubercular children were particularly susceptible to this complication. If proper attention

were given to the condition of the nose and throat during the course of an exanthem, otitis would not be likely to develop, and it was rarely necessary to incise the drum membrane except where a suppurative process developed slowly.

Dr. E. Gruening said that catheter inflation in a child sick with scarlet fever was an exceedingly difficult and wholly unnecessary procedure, and rather favored the passage of microorganisms from the throat to the ear. The incision of the drum could hardly be done with sufficient freedom except under general anæsthesia. If suppuration were present, the use of the cold coil was a waste of valuable time, and if there were no suppuration, it was not necessary. A postauricular swelling was indicative of rather prolonged disease of the mastoid.

Dr. Arnold Knapp said that to be effective the applications should be made to the Eustachian tube, yet this was exceedingly difficult in young children. He did not think it was quite safe for the general practitioner to undertake the operation of incising the drum membrane.

Dr. J. E. Winters said that he had compared the results obtained in the Willard Parker Hospital with the conservative and the radical methods of treating otitis, and felt convinced of the superiority of the latter. He did not believe, however, in the general practitioner attempting to treat such cases. In the same epidemic, at different times, it was not uncommon to find the frequency of this complication vary from 10 to 50 per cent. He was inclined to differ with Dr. Fruitnight when he said that the severity of the otitis bore a direct relation to the severity of the throat inflammation. A child with pharyngeal adenoids was almost sure to have otitis as a complication of scarlet fever. As many cases of suppurative otitis certainly were not associated with pain, and with only very slight tenderness over the tragus, the temperature curve became of great diagnostic importance. He had known, in several instances, competent aurists to fail to discover the existence of an otitis media after inspection of the drum, yet the disease had been present, and the ear had discharged within a short time. He personally placed great reliance on a diagnosis made by careful exclusion.

Dr. H. D. Chapin thought it was not at all uncommon for cases of otitis media to be cured by spontaneous rupture of the

drum. The crookedness of the canal made it very difficult for the general practitioner to inspect the drum in infants.

Dr. A. Jacobi said that the general consensus of professional opinion favored the view that ear disease was largely the result of affections of the nose and throat. The forcible irrigation of the nares in diphtheria would almost invariably result in otitis; hence when a child was fearful of the procedure and offered resistance, the washing should be done with a nasal cup instead of a fountain syringe. He was one of those physicians who favored the practice of making a daily toilet of the nose, and so firmly believed in the wisdom of it that he had long practised it upon himself. If this were done in persons having small adenoids, the latter would probably shrink up and disappear.

Dr. S. J. Meltzer spoke of certain autopsy records on one hundred children in Breslau, which went to show that in only nine of these children had there been an entire absence of evidence of purulent or muco-purulent otitis, yet in very few instances had it been recognized during life. He did not look upon incision of the tympanic membrane as the innocent procedure many would have us believe.

Dr. Francis J. Quinlan emphasized the necessity for great gentleness in irrigating an infant's nose, and advised that the fluid should be poured in while the little one's mouth was open.

Dr. J. H. Woodward pointed out the desirability of making the diagnosis of mastoid disease before the appearance of a post-auricular swelling.

Dr. Jacobi remarked that it was not enough for children to simply keep the mouth open while the nasal passages were being washed out; small quantities should be introduced intermittently so as to coincide, as far as possible with inspiration.

Dr. May admitted that a certain proportion of cases of otitis media went on to spontaneous recovery, but characterized the let-alone treatment as too dangerous. In the early stage he saw no harm in relieving the suffering of the patient by such medication as a combination of caffein and acetanilid, but, of course, as soon as there was reason for suspecting the existence of suppuration, no time should be lost in incising the drum membrane.

Dr. Gruening said that the escape of serum instead of pus after incision did not by any means indicate that the inflammation was a mild one, for it would be found, on bacteriological examination, that this serum contained streptococci.

Dr. Dench said that a sudden rise of temperature in the course of one of the exanthemata was good reason for believing that an otitis was developing, whether or not it was associated with pain. Mistakes in diagnosis might occur after inspecting the tympanic membrane because of the absence of a red color, but it would always be found that the membrane lacked its natural lustre. The inspection of the drum in infants could be made much easier if the external ear were drawn downward, and the examiner looked upward into the auditory canal. He did not consider spontaneous rupture of the tympanic membrane ever advisable.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, April 11, 1899.

Dr. Edwin E. Graham, President.

CICATRICIAL STRICTURE OF THE ŒSOPHAGUS IN CHILDREN.

Dr. J. H. Jopson read a paper on cicatricial stricture of the œsophagus in children, and exhibited a patient in whom gastrostomy had been performed. In children the most frequent cause of this condition is the ingestion of caustic substances especially lye, and these strictures are of the most intractable nature, owing to their length and the fact that they are usually multiple. The symptoms may come on at a longer or shorter interval after the swallowing of this caustic and the symptoms of ulceration may shade into those of contraction. The symptoms are gradually increasing difficulty in swallowing, first of solids, later of soft foods and liquids, vomiting after the taking of food, pain and tenderness, localized or referred to neighboring points, constipation or diarrhœa, and a tendency to catarrhal affections of the bronchi. The tendency is for progressive contraction until even soft and liquid foods encounter obstruction, and the symptoms of starvation are added to the clinical picture. The diagnosis of the stricture may be made, and information elicited as to its location, calibre and permeability by the pas-

sage of bougies, soft instruments being preferable for this purpose. The methods of treatment employed comprise gradual or rapid dilatation from the mouth, electrolysis, œsophagotomy, internal and external, œsophagotomy, simple gastrostomy, and gastrostomy combined with retrograde dilatation, retrograde divulsion, internal œsophagotomy, continuous dilatation and Abbes' string method. The cases not responding quickly to gradual dilatation from the mouth, gastrostomy will frequently be required and the mistake is more usually made of putting it off until too late than of performing it too early.

The patient exhibited was a girl aged four years, with a lye stricture of the œsophagus seven inches from the teeth. The stricture being impassible to bougies, gastrostomy was urgently demanded to obviate threatened starvation, as there was almost complete obstruction to the passage of liquids. The operation was done in two stages.

There had been a marked gain in weight and strength since the operation, the rest given the œsophagus had resulted in a partial restoration of the power of swallowing. A tube was worn in the fistula for a time, when it was discarded, and a rubber belt with an inflated bulb in its centre used with admirable effect to control leakage. Two months had elapsed since the operation and it was now proposed to practise Beehuisen's method of dilatation with silver balls of graduated size to be attached to a thread, swallowed and withdrawn after they had passed the stricture.

Dr. L. J. Hammond.—It would seem out of place to mention any other procedure for dealing with œsophageal atresia after having seen this favorable result following the method of Dr. Jopson, and yet there is one method which might be spoken of; that is, doing first an œsophagotomy, below the seat of stricture, then passing the finger up to the point of stricture and with a blunt pointed bistoury incising it in several places. The tube then can be at once passed through the mouth into the stomach and left in position, or the treatment can be made directly through the œsophageal opening. By this means it seems to me that much less treatment is called for and earlier recovery may be expected to take place. The necessity for mechanical means will be early removed, and I think would avoid leaving prolapse such as we have in this case of the mucous lining of the stomach. I have operated on one case in

the manner above outlined, and the results were very satisfactory indeed. This procedure could not be resorted to where the obstruction closely approached the cardial end.

Dr. J. P. Crozer Griffith.—I have watched this case with a great deal of interest. It was under my care in the Children's Hospital, having been brought to the Out-patient department last June. I sent it to the wards and lost sight of it until this winter, when it again came under treatment during my term in the wards.

In attempting to drink water she would sit with a bowl of ice in her lap, and every few minutes raise it and drink what water had melted, and then almost immediately regurgitate all she had swallowed. It was pitiable, too, to see her wasting away. I tried repeatedly to get a sound into the stomach, but had no greater success than Dr. Wharton met with. Evidently the stricture was near the stomach and could not have been reached by any operation upon the œsophagus from the outside. The child regained some ability to swallow about a day before the operation, and after it seemed to learn to swallow pretty well. I was very anxious that there should have been some effort made at the time of operation to dilate this stricture from below, because a permanent opening into the stomach is certainly not a thing greatly to be desired, but I know that Dr. Jopson's opinion of the child's condition was that it was not such as would warrant much interference at the time.

Dr. Jopson.—In reference to Dr. Griffith's remarks upon the advisability of doing anything more at the time of the first operation, I am strongly of the opinion that it would not have been wise. The operation may seem simple, but it is attended with considerable risk in this class of cases. In a gastrostomy done at the Children's Hospital by the Witzel method, the child died of shock within twenty-four hours. Again in cicatricial strictures in children it is better to wait until a fistula is formed and then dilate, because these strictures are often multiple and the process of dilatation is liable to be tedious.

Hydronephrosis, Pyonephrosis; Nephrectomy in a Boy Four and a Half Years Old.

Dr. Emery Marvel reported a case of this character in a boy aged four years and six months, who had been in previous good health. He was accidentally shot on October 7, 1898.

Three hundred and eighteen small bird-shot penetrated the back of the head, body and legs; some of which perforated the thighs leaving tracks of over three inches. These wounds were cleansed and dressed. The following day the urine was smoky-red, alkaline, ropy, showing albumin and blood in large quantities. During the subsequent twelve days there was continuous improvement; but patient complained of frequent pain in the penis and right testicle. On October 19th, twelve superficial shot were removed; one of these was taken from near the right spermatic cord. Three days later while the boy was out playing, a prominence was observed in the right lumbar region, which increased during the seven subsequent days. From this was aspirated twenty-seven ounces of straw-colored alkaline fluid in which albumin, bile, blood cells and phosphatic crystals were found. The urine the same day contained neither albumin nor blood.

The day following aspiration the prominence began to recur and rapidly increased for three days, when fear of rupture was apprehended. At this time a lumbar incision was made, liberating over a half gallon of fluid. Failing to secure the kidney, the removal of which was projected, the wound was closed, leaving a tube for drainage. Patient's condition good for nine days when there was a rise of temperature ranging from normal to 104° F. This became normal December 1st, and remained so for two weeks, when it abruptly jumped to 106° F., followed by great irregularity until time of subsequent operation.

On December 22d, a lumbar incision was made, the kidney found, brought out, vessels and ureter ligated and the organ removed. Upon section of the ureter much pus was set free. The kidney was enlarged, measuring greater curvature 16 c.m., lesser curvature 10 c.m., breadth 5½ c.m., and width 5 c.m. It also showed several wounds where shot had perforated the organ.

With the exception of failure in respiration after operation, due to ether narcosis, the recovery was uninterrupted, patient being discharged from Hospital January 15th, twenty-three days after operation. March 12th, seventeen ounces of urine were passed during the twenty-four hours, showing no albumin or other abnormal constituents. The boy is now stouter and heavier than ever, and suffers no inconvenience.

Dr. J. H. Jopson.—I think that the ureter itself was injured and probably secondarily occluded. That there was an injury of the kidney or the ureter is proven by the presence of hæmaturia; and the slow formation of a cystic tumor in the loin after such an injury as this boy received would point to the same conclusion. A swelling appearing immediately after the injury would probably indicate a peri-renal hæmorrhage, whereas a tumor due to extravasation of urine would not appear immediately, but as a result of gradual leakage, and this I think is what happened here. A tumor appearing in the loin a considerable time subsequent to the injury would lead one to suspect a stricture of the ureter with consequent dilation of the kidney, and hydronephrosis, as Morris points out in his Hunterian lectures. In this case there was no dilation of the kidney, and I should interpret the condition as one of peri-renal extravasation of urine the result of a wound of the ureter. If the perforation of the ureter could not be found, and if there resulted a persistent urinary fistula, nephrectomy might be justifiable, and it would certainly be indicated if, as often happens, infection of the fistula and kidney takes place, an accident which is often unavoidable, and which apparently occurred in this case.

Dr. L. J. Hammond.—In reference to the diagnosis, if it had been peri-renal inflammation, I think one of the most conspicuous as well as earliest symptoms would have been marked flexion of the thigh upon the abdomen, due to the irritation of the lumbar, psoas and iliac muscles.

Dr. Marvel.—I am glad to hear from Dr. Jopson regarding the possibility of peri-renal abscess. That appealed to me as being more than probable at first, but after having cut through the abdominal walls there was no evidence of involvement of the peri-renal tissues. There was never any marked flexion of the thigh, and the boy was able to walk even when the tumor was largest.

DOUBLE HARE-LIP AND CLEFT PALATE.

Dr. J. P. Crozer Griffith exhibited a case of double hare-lip and cleft palate with the intermaxillary bone attached only to the bones of the nose.

Dr. J. H. Jopson.—Dr. Ashhurst has been waiting for the child to convalesce from bronchitis, to which affection these children are very liable. The pre-maxillary bone in this case is

attached by such a slender pedicle that it will have to be cut away and the skin covering it can be used to form a columella for the nose. There will be some trouble also in bringing together the sides of the lip owing to the width of the gap. After that the matter of closing the hard and soft palate will have to be left until the child is a few years older.

DR. ALLEN.—Some months ago I saw a child with cleft palate without the complication of hare-lip. I learned upon inquiring into the family history that a sister of the child's mother had had cleft palate, and in a brother of the mother I noticed a cleft uvula, with probably a cleft hard palate. This is interesting as an instance of hereditary transmission of the deformity.

A CASE OF ACETANILID POISONING.

DR. THOMPSON S. WESTCOTT reported a case of acetanilid poisoning in a female infant four months of age, the child of a brother practitioner. She was a fat, well-developed baby, nursed entirely upon the breast; and during the hot weather of last summer she perspired freely and became chafed in the folds of the groins and the creases of the thighs, a mild eczematous condition existing in a small portion of the areas affected. For this the father had ordered a dusting powder of pure acetanilid. Three hours after the drug was applied the whole surface of the body showed a peculiar grayish pallor and the lips were bluish, though the surface temperature was not thought by the mother to be lower than usual. The cyanosis increased for an hour and a half, the face became pinched and drawn in appearance, and the baby was in a profound slumber from which she could not be easily aroused. When the father first saw her, four or five hours after signs of poison were first noticed, the cardiac action and respiration were not appreciably disturbed. The remains of the powder were not removed till this time. Recovery gradually ensued without any more active treatment than small doses of whiskey once or twice repeated. In this case the actual amount of surface capable of absorbing the drug was very small and in no way comparable to the area of surface exposed in other cases so far recorded. The report concluded by deprecating the free use of so dangerous a drug under any conditions in young children and considered that the existence of any break in the surface should demand the greatest caution in its use, if indeed, this should not be judged a positive contraindication.

Dr. Alfred Jand, Jr.—When I was on duty as Resident in the German Hospital, we used acetanilid rather extensively. I recall a case of a man with an extensive laceration of the arm, from the wrist almost to the shoulder. I sprinkled acetanilid on the surface, making no estimate of the amount used and in a very short time I had the man very cyanotic, which condition disappeared with the cessation of the use of the acetanilid. I also saw a case of poisoning in a child in which a 10 per cent. ointment had been prescribed for a case of eczema. Through a mistake more of the ointment was used than had been intended and four ounces had been applied within twenty-four hours. The child went into profound collapse, with very weak pulse. Removal of the ointment and stimulation brought about recovery. Since then I have, as Dr. Westcott suggests, avoided using it on raw surfaces. Acetanilid being soluble in alkaline fluid, the alkaline juices of the body would take it up very readily.

Dr. Branson.—I am reminded of a case seen during my service in the Pennsylvania Hospital, in a man who was under the care of Dr. T. S. K. Morton. About two drachms of the powdered drug were used and in a few hours the man became very cyanotic, the pupils were dilated and he developed a very peculiar, happy delirium, which kept up for about three hours and a half. He sang very loudly and was extremely happy. The pulse and respirations were not particularly affected.

Dr. Westcott.—I think, as I have said, that it is a dangerous drug to use with young children and that there are many other antiseptic dessicant applications which could be employed with absolute safety, such as the stearates. In this case the amount of raw surface was very small, in fact, nothing more than the intertrigo so frequently produced in the folds of the skin by hot weather. It is quite likely that absorption was favored by the moist condition of the skin and that thus the general surface took some part in the absorptive process.

Current Literature.

MEDICINE.

Dawbarn, Robert M.: The Signs of Inherited Syphilis. (*New York Medical Journal.* 1899. Vol. lxix., No. 14.)

Prompt recognition is essential if treatment is to offer any hope to the congenital syphilitic. And it would therefore seem that a good purpose would be subserved in collecting in compact form as thorough a list as may be of clinical signs of real value and import. This the author has tried to do, and presents twenty-seven such diagnostic points. Not all, he believes, have equal pathognomonic value; and yet not one has been included for which high authority could not be produced.

A chronological order of involvement in this disease, when inherited, is quite wanting. The symptoms must therefore be designated simply as those which usually are early and those of later appearance. It is understood that the inherited type is that under discussion. Consequently, the initial lesion is not herein studied.

Naturally, we begin with an early group.

Quoting the famous Diday, Dr. J. L. Smith says:

1. "Next to the look of *little old men*, the most characteristic sign is sallow color of the skin or *café au lait.*" This applies to the newborn. These little ones are very rarely plump. They are wrinkled to a degree that justifies Diday's graphic words. Still, it is not unknown that even a plump baby, when newborn, may shortly prove syphilitic.

2. The author next mentions a sign rarely alluded to, but given by a few good authorities. It is included at this early point not because of its prominent value, but because it is to be noted at once. This is an *umbilical cord* so extremely thick as to seem swollen, and also apt to be very long; and to be very slow in becoming detached from the navel. This swelling and unusual nutrition of the cord may be due to a partial *endophlebitis obliterans*, occasionally noticed, and involving the umbilical vein.

3. *Pemphigus Syphiliticus.*—The mortality is almost 100 per cent. The *vesicular* syphilide occurs, as the name implies, in small blisters; and is commonly associated with a pustular eruption. Groups of the little vesicles form here and there, closely packed together. It is not so fatal a sign as pemphigus,

but nevertheless indicates a severe type of infection. It is worth noting that, although syphilis is so polymorphous in its skin manifestations, it is only in the early and inherited type that we find bullæ or vesicles. Exceptions to this rule are very rare.

4. The *common eruption* in its most frequent early form is an erythema. The macules first appear upon the lower part of the abdomen and about the genitals, as a rule—pinkish early, later coppery in color. The rash is apt to show itself first about three weeks after birth. Certain English writers allude to "syphilitic penny pieces," as descriptive of the appearance; but "farthing pieces," would be a little more nearly right; for in size, after becoming fully developed, they average that of the baby's finger nails. Subsequent crops may show any and all syphilides, fully as polymorphous as, and more irregular in development than acquired syphilis. We should remember that in only about 25 per cent. of the cases of inherited syphilis do we find any eruption at all.

5. *Condylomata* are often seen early, and at the mucocutaneous junctions, and also where there is chafing and moisture of the skin. The commonest seat is at the anus.

6. "*Snuffles*" is one of the commonest signs—due to coryza syphilitica, or later on, to a true ozæna. Coryza of the newborn is exceedingly suspicious always, say Ashby and Wright.

7. The same pathological changes in the larynx—*i. e.*, mucous patches, ulceration, or later on, gummatous involvement at times, are responsible for the characteristic *hoarseness* of the crying and of the speaking voice.

8. *Mucous patches* will be found quite often, and may be observed at times upon any of the mucous surfaces capable of inspection—the lips, mouth, anus, nose, larynx.

9. But even in the absence of such patches a *general stomatitis* and *pharyngitis* is an almost constant phenomenon in early cases of congenital syphilis, according to Holt. Ulceration is apt to appear later. A peculiar desquamation of the tongue has been at times noted too.

10. Sometimes there is a diagnostic value even in a negation; and as a distinguishing sign between the congenital and the acquired variety it is a striking fact, mentioned by a number of authors, that general lymph-nodular enlargement of the usual subacute and chronic kind is characteristically absent in the congenital type.

11. *Hæmorrhages,* while infrequent, are diagnostic when present. They may occur either from ulcerated or from apparently sound mucous membranes; or ecchymotic spots may develop, quite without traumatic cause, here and there beneath the skin.

12. Among visceral involvements, Virchow's term, "*a white pneumonia,*" is worth remembering; due mainly to a fatty degeneration of the epithelium of the air vesicles. This pneumonia is the type occurring in the stillborn and those dying not long after birth; in older cases there may be an interstitial pneumonia, or else gumma of the lungs. Of course, the "white pneumonia" is mainly of *post-mortem* diagnostic value. To be sure, it is suspicious to have a baby born with pneumonic disease, or to have this appear very shortly afterward; but the physical signs of the consolidation cannot be said to differ from those of pneumonia otherwise induced.

13. *Involvement of the liver* is very frequent in congenital syphilis, and is due to diffuse interstitial hepatitis or to gummata, or occasionally to amyloid degeneration. A distinct enlargement, accompanying other signs, is suspicious. It may, of course, cause ascites, but is not accompanied by jaundice, which fact is interesting.

14. In newborn syphilitics the *spleen* is almost always involved, according to Holt. Gee, however, puts it as being enlarged in at least one half the cases. Whatever the exact proportion, it is plain that distinct enlargement of this viscus has great diagnostic value. Taylor states that, once begun, the growth is rapid—the size of the organ often being quadrupled in two or three weeks. There may, of course, be kidney involvement, too, but not in a way to enable us to differentiate it from nephritis of other source. This is also true of the pancreas.

15. Certain eye troubles are highly diagnostic. Of these, one, almost pathognomonic, is "*ground-glass cornea,*" due to interstitial punctate keratitis, and with no tendency to ulceration. Iritis, choroiditis, retinitis, optic neuritis may also be found. But the first-named (keratitis) is the one of greatest diagnostic value.

16. Inflammation of the *middle ear,* by itself, can not be considered of much value; but when associated with certain other symptoms it is otherwise. Hutchinson's famous "triad of symptoms" are: notched teeth, ground-glass cornea, and

otitis media. Hutchinson also mentions a suddenly and painlessly occurring deafness as being almost always of this nature, and may lead to deaf-mutism.

17. A rapidly occurring *alopecia* is suspicious of syphilis, and occurs as well in the inherited as the acquired, though by no means always.

18. Among rare signs, though of great value when present, must be mentioned a *painless orchitis.* The testicle may be handled and pressed with impunity.

19. *Neuroses* must not be forgotten, though infrequent and not occurring very early, as a rule. Chorea, epilepsy, hemiplegia, for example. As to epilepsy, Jackson urges that the brothers and sisters of an epileptic child should be most carefully examined (as well as itself) to determine whether syphilis is not the cause. Regarding paralyses, it is enough to say that as gumma develops in the later stages of congenital syphilis, just as it does in the acquired, there may be any and all forms; and suddenly and quietly appearing paralyses should make us think of this disease before any other, as to a cause.

20. Discussion of the sundry osseous signs are deferred until this point, not because they occur late, all of them, or are unimportant, but in order to study them in a group together. Among the commonest and earliest of all important signs is *osteochondritis*, involving the shafts and epiphyseal junctions of the long bones. Taylor says this is often the only sign; and that at other times its presence decides the syphilitic nature of coexisting lesions. It is usually found at birth or within a month later. The swellings are rather distinctly limited as a rule, and the child suffers when they are handled. Those of rickets are apt to occur much later, and to be more epiphyseal than in the cartilage and shaft. In bad cases there may finally occur separation of the epiphyses, suppurative osteomyelitis, and narcosis.

21. Later in appearance than osteochondritis is *syphilitic periostitis.* Perhaps as characteristic a sign as any from this source is the one called "*the nodes of Parrot,*" and described carefully in Moullin's *Surgery.* Here the two halves of the frontal bone and the two parietal bones are so thickened as to form distinct bosses, four in number, and surrounding the anterior fontanelle.

22. *Dactylitis syphilitica* (one variety of "spina ventosa")

affects mainly the first phalanges, and differs from the tuberculous variety in this regard, as also the fact that with syphilis as a cause it is apt to be multiple and symmetrical—that is, appearing on both hands.

23. The *finger nails* have sometimes peculiar forms of onychia. It may be ulcerative; but, in particular, there is one characteristic form—"*the claw.*" In this the root of the nail seems pinched transversely, being thus narrowed, and at the same time it thickens until its appearance earns the appellation given.

24. The *temporary teeth are cut very early*, of bad color, and liable to a crumbling decay. The upper central incisors of the milk set suffer first (Erichsen). It is curious how widespread, even to-day, is the belief that it means bad luck to have teeth at birth; and here, upon eminent authority, is a justification for the superstition. Twice in Shakespeare's play of Henry VI is this alluded to. When, in the Tower, King Henry taunts the humpbacked Duke of Gloster with being born with teeth, the latter considers it sufficient cause for stabbing him to death, which was in those days considered a witty repartee, as it was certainly an effective one.

25. *Hutchinson's Teeth.*—These famous signs are only found in the permanent set, it must be remembered. The upper central incisors are again the ones mainly involved, or at least most characteristic. The notching of their lower edge, and peg shape, or screw-driver shape, are familiar to all medical men. But not all cases of syphilis, either inherited or acquired, who reach the necessary age to have second incisors present Hutchinson's teeth. He has himself pointed out that it is found only in those who have had syphilitic stomatitis at an early age.

26. In late cases are found irregularities, hypertrophies, and asymmetries of bony development. In the face the *nose* is the characteristic deformity. This, due to necrosis, has shortened—the lower part retreating toward the upper part; or else the bridge is sunken. (A most ill-omened sign, for when the bridge is quite gone, of course they can never get over it.) The *tibia* is elsewhere the most characteristic of these late bony changes. It is greatly thickened; its crest being no longer a mere ridge, but it has become a wide surface, swelling forward so that a side view gives a characteristic *sabre shape*.

27. In conclusion, it is a matter of great interest, to examine

into the stigmata of a syphilis which was active in early childhood, but now is either quiescent or cured. The tibial and other bony changes just mentioned come under this heading ultimately.

Chronic fissures about the lips often exist in late cases, and these leave diagnostic linear cicatrices there. Small scars upon the skin or mucous membranes of children no longer in infancy deserve study. When of this nature they are apt to be in outline curvilinear or crescentic, in groups, and not rarely are symmetrical upon the two sides. They are especially diagnostic when found upon the upper part of the legs. Such signs imply that the child once had a rather severe type of the disease, though now, perhaps, cured.

Baginsky, A.: Pericarditis in Children. (*Berlin Klin. Wochenschrift.* No. 49. 1898. *Medical and Surgical Review of Reviews.* 1899. Vol. ii., No. 5.)

Writers differ as to the frequency with which pericarditis occurs in children, but Baginsky agrees with Henoch that it is by no means uncommon. His present paper is founded upon a study of 66 cases which occurred among 4,500 admissions to hospital. Two noteworthy facts are at once apparent when the cases are examined, the one, that nearly one-third of the whole number of cases (20 out of 66) were in infants under a year old; and the other, that in 6 cases measles was the exciting cause of the malady.

Serous pericarditis was present in 13 patients out of the whole number, and was generally easy to recognize clinically. The symptoms were well marked and severe, consisting of cyanosis, dyspnœa, and pain in the chest, with irregular fever and increased pulse frequency—(120-150 beats per minute.) The area of dulness caused by the fluid did not correspond very exactly with the usually described "triangle" on the front of the chest: in the horizontal position the right margin was generally almost vertical in direction, while on raising the child into a sitting posture, the area of dulness assumed an elongated oval shape nearly horizontally directed and continuous at its right lower border with the liver dulness. An area of dulness could also be made out on the back of the thorax at one or both bases of the lungs. This is liable to be mistaken for pleural effusion, but any doubt is easily cleared up on deep inspiration,

when the breath sounds are clearly heard over the compressed area, or by puncture. The typical friction sound is generally well heard in these cases. The treatment of this form of pericarditis is in the main that of the disease, generally rheumatism, which causes it. Digitalis or strophanthus may be of use to quiet the over-acting heart, and ichthyol ointment applied locally. Mercury is not generally advisable, but may be of assistance in severe cases. In none of the present series of cases was surgical treatment resorted to.

Purulent pericarditis occurred in 20 cases, of which 4 were caused by actual tuberculosis of the pericardium, and 3 followed measles; the rest were associated with suppurative processes elsewhere. Eleven of these patients were infants under one year. The general symptoms were very severe, with restlessness, cyanosis, dyspnœa, and cachexia. The temperature was generally intermittent, but in the youngest case of all, a child of ten days, there was no pyrexia throughout. All the cases ended fatally. The physical signs were slight, friction being often entirely absent, and no increase of cardiac dulness being produced.

Pericarditis appeared along with *tuberculosis* in 11 cases, but in only 6 of them was there actual tubercular deposit on the pericardium. In these latter the physical signs were well marked, and the symptoms also unmistakable; in the others the phenomena of the general disease often masked those due to the pericardial lesion.

Fibrinous pericarditis is the commonest variety, and results, as indeed the tubercular disease may also, in obliteration of the pericardial cavity by adhesion of the two surfaces. In very early years the course is more acute than in older children, in whom the disease may take a chronic form. The latter are generally easily diagnosed, but the former may give rise to no characteristic phenomena, and be discovered only *post-mortem*. A very real danger which must always be borne in mind is that of sudden death without warning, even in cases apparently convalescent. Baginsky records two such occurrences. In chronic cases great enlargement of the heart results, owing to the impediment existing to its proper contraction; the fibrous tissue formed may also contract round the roots of the great vessels and cause serious narrowing of their calibre. An exactly opposite condition of the heart is occasionally found—

namely, an atrophy of the muscular wall and generally smallness of the organ. Treatment in these cases—beyond that directed to the cause of the malady, which is generally rheumatism—can only be palliative, and must consist in the use of those means already indicated as useful in the serous form of the disease.

Stewart, J. Purves: Clinical Considerations in Chorea. (*Edinburgh Medical Journal.* 1899. Vol. xlvii., No. 525.)

Chorea is essentially a disease of childhood, being most common between the ages of five and fifteen years. In forty-one cases, no fewer than thirty-two came on between the fourth and fifteenth year (this, of course, refers only to first attacks of chorea). After fifteen years of age chorea is much less common as a primary attack—six of the author's cases occurring between the ages of fifteen and twenty-four, but second and third attacks are by no means uncommon after the age of fifteen.

The commonest starting-point for the choreic movements is in the hand. Once begun, the movements are quite characteristic. They may vary in degree, from the slightest restlessness of the fingers to the wildest and most violent irregular movements of the whole limb. The affected joints are impetuously flexed, extended, rotated, or circumducted. The eyes roll about restlessly, and the patient makes peculiar, foolish grimaces, sometimes shutting his eyes or showing his upper teeth. The jaws may open and shut irregularly, the tongue may be rolled in various directions, and not infrequently is it bitten by a sudden, involuntary snap of the teeth. Respiration is often jerky and irregular; the action of the diaphragm is frequently overshadowed by that of the intercostals and extraordinary muscles of respiration. Sometimes the intercostals and diaphragm contract alternately instead of synchronously.

In severe cases the limbs and trunk may be thrown about so violently that the patient falls out of bed or may bruise or cut the bony prominences of his arms, legs, or head, by knocking them against surrounding objects.

Voluntary movements are always more or less impaired when involuntary choreic movements are going on. The irregular spontaneous movements of chorea are very little under control of the will. But sometimes, in mild cases, no spontaneous movements can be observed, the chorea only becoming evident

on voluntary exertion. A good test for slight cases of chorea is to make the patient hold up both hands for a few seconds above his head, with the fingers outstretched. This usually succeeds in bringing out a few irregular wriggling movements of the fingers on the affected side. Or make the patient squeeze one's hand, and one perceives the choreic grasp to be sudden, spasmodic, jerky, and ill-sustained.

Articulation is often jerky and indistinct. In bad cases the speech may be quite unintelligible, or the patient may speak only in whispers, or he may absolutely refuse to speak at all. In the latter instance a mental element is superadded, which in severe cases of chorea is by no means infrequent. Deglutition is often inco-ordinated and imperfectly performed.

A considerable degree of muscular weakness is common in chorea, and in some cases it may be so severe that the patient is unable to raise a limb from the bed, although slight restless movements are seen going on irregularly in the weakened limbs. Such cases, where the weakness is out of all proportion to the choreic movements, have been termed "paralytic chorea," and in many of them the choreic movements are only brought out on attempted voluntary movement.

The sensory phenomena in chorea are not referred to in the text-books with the emphasis which their frequency merits. True, in cases of chorea, the patient does not usually complain of numbness or pain, or any other abnormal feeling. But if the cutaneous sensibility be carefully tested in every case of chorea, it will be found that a certain proportion of patients exhibit a degree of blunting of sensation on one side of the body. This was so in ten cases out of forty-one in our series. Such hemi-anæsthesia, where present, is always found on that side of the body, on which the choreic movements are best marked.

One of the author's cases exhibited marked diminution of acuity of vision, smell, taste, and hearing, on the preponderatingly choreic side, without hemianæsthesia to touch or pain. The hemianæsthesia of chorea is very slight in degree, and can only be detected by careful comparison of corresponding points on opposite sides of the body. When this is tried, a considerable proportion of patients will be found to perceive light touches and pricks more acutely on one side than on the other, and the boundary of this area of blunted sensibility will always be found to lie in the middle line of the body. Sometimes the trunk and

limbs are alone involved in the hemianæsthesia, the face and scalp escaping.

As to the reflexes, the superficial reflexes are occasionally diminished on the hemianæsthetic side. The only other point worthy of note in this connection is the "choreic knee-jerk," which is demonstrable in a certain proportion of cases. When present it differs from the healthy knee-jerk, in that when the patellar tendon is tapped, instead of producing a brisk contraction of the quadriceps extensor, followed at once by a sudden relaxation, the knee in such choreic cases is suddenly extended to its full extent, and remains so for a second or two, the foot and toes meanwhile exhibiting irregular wriggling movements. In very severe cases of chorea, with much mental dulness, the sphincters may become uncontrolled, the patient passing urine and fæces in bed.

Comby: Arythmia of the Heart in Children. (*Archives de Méd. des Enfants.* Vol. 1., No. 1.)

There is an essential or physiological arythmia in young children, which is simply due to the state of their nervous system, and is as marked during sleep as during the working hours. It is not a constant condition, but may come on without apparent cause, or after excitement of any kind. No cardiac or urinary lesions accompany it.

Toxic arythmia may be caused by an accidental or therapeutic poisoning, as after the use of digitalis or of chloroform. Or the poisoning may be of endogenous origin, as in gastro-intestinal diseases.

Dyscrasic arythmia occurs in children afflicted with obesity, diabetes, asthma, migraine or any other diathesis, and in acquired conditions like rickets, anæmia, or cyclic albuminuria.

Arythmia of nervous origin occurs in chorea (where it may also be due to the anæmia), hysteria, epilepsy, cerebral excitement, and excessive masturbation.

During convalescence from acute febrile diseases of long duration the arythmia may be attributed to cardiac inanition, anæmia and weakness; but after diseases of short duration one must assume a toxic influence upon the cardiac regulating centres.

The prognosis in all varieties of arythmia is good, unless symptoms of cardiac failure (syncope) accompany it. In that case grave bulbar paralysis or latent myocarditis is present.

Treatment must be directed toward removal of the cause, where possible: as, general hygienic methods in nervous children, etc. When cardiac failure threatens, active stimulation must be resorted to. But this happens rarely, and in the great majority of cases cardiac arythmia in children need not cause any apprehension.

Ausset: Chronic Tuberculous Peritonitis. (*L'Écho Méd. du Nord.* Vol. 2., No. 7.)

A girl of nine years, of good family history, had had pertussis and broncho-pneumonia at the age of four, and measles at six. The present illness was of nine months' duration, and began with colicky pains in the abdomen, occasional diarrhœa, fever at night, emaciation and enlargement of the abdomen. On examination, the signs of enlarged bronchial glands were found in the chest, but the lungs were normal. The abdomen was soft, not tender, and there was fluid in the peritoneal cavity. No peripheral œdema was present, and the urine was free from albumin, but contained indican.

Fluid removed by puncture was negative for tubercle bacilli, and an inoculated guinea-pig remained well. The parents finally consented to an operation, the local and general symptoms having become worse. Laparotomy was done, and five litres of clear fluid evacuated. The peritoneum was enormously thickened and covered with gray, miliary tubercles. So that the case was an example of that form of chronic tuberculous peritonitis known as chronic tuberculous ascites.

The peritoneum was apparently infected through the general blood stream, into which the tubercle bacilli were poured in moderate numbers from the bronchial lymph nodes, evidently the primary seat of invasion. In spite of the operative interference the ascites re-appeared, and the patient will probably succumb to the tuberculous process.

Cordes, A.: Scarlatina in an Infant. (*British Medical Journal.* 1898. No. 1979.)

Mrs. F., aged thirty-nine, was at the end of her fifth pregnancy, when all her children but one took scarlatina. She nursed them herself. Mrs. F. had had scarlatina when a child.

When she felt the first symptoms of labor she went to Lyons, some two miles from her country place, to avoid the contagion for the child. She was delivered there of a fine girl

on January 2, 1866. The second day the child had sore throat, with much fever, and Mrs. F. said to Professor X., her attendant, "I am afraid baby is going to take scarlatina." This Professor X. would not admit, saying it was impossible, no case existing in the neighborhood, and the baby not having been exposed to the contagion. However, the baby developed a strong eruption of scarlatina and died on the third day.

Hrdlicka, Ales: Physical Differences Between White and Colored Children of the Same Sexes and Ages. (*Monograph on Anthropological Investigations.*)

The differences between the two classes of children may, in a resumé, be arranged into those which were observed equally in both sexes, and those which are prevalent in either the boys or the girls. As to differences without regard to the sex or age of the children, in a general way it can be stated that the white children present more diversity; the negro children more uniformity in all their normal physical characters. This becomes gradually more marked as the age of the children advances.

As to physical abnormalities, those of congenital origin are much less frequent in the negro child than they are in the white one; with acquired abnormalities, principally the results of rachitic conditions, the case is almost the reverse, those characters being less frequent in the white children.

In detail we find the following differences between the two classes of children: The average height of the colored child is in all ages from one to three mm. greater than is the average height of white children, all the nationalities of these latter being taken together; it is still slightly greater when compared with the average height of only the American-born children, who are taller than the children of most other nationalities.

The average weight, unlike the height, is greater in the white children at all ages up to puberty; beyond puberty, particularly in the girls, the colored subjects seem to gain in weight more rapidly than do the white ones.

The size of the head is, on the average, slightly smaller in the negro children than it is in the white, provided we consider the size of the head in its relation to the size of the body. There are individual exceptions to this rule.

The form of the head is less variable in the colored children than it is in the American-born white children. A pure Ameri-

can colored child shows generally a pronounced dolichocephaly, whilst the normal white American child will show us everything from a marked long head to a pronounced brachycephaly. West Indies negro children are more frequently short headed than those of North American origin.

The hair of the pure negro child is quite lusterless, and, as a rule, either curly or wavy, by far more frequently the former than the latter. The proportion of wavy hair increases largely in mixed subjects, and the same is true about luster of the hair. In white children, those of American origin especially, curly hair is found very seldom, and the curls always differ from those of the negro; they possess luster and will never show compact rouleaux arrangement. We do find curly hair among Jewish children and children born in southern European countries, and occasionally also among Teutonic people. Wavy hair is quite common among Jewish and Syrian subjects.

The forehead is on the average narrower at all ages in the negro child than it is in the white. The height of the forehead, however, is not smaller in the colored subject, and is occasionally even greater than it is in some of the white children.

The face of the colored children is generally more prognathic than is that of white children. The prognathism is both facial and alveolar.

The malar bones are somewhat more prominent in the colored child, but the difference is not so great as that which may be observed between a child of a yellow race and a white one.

The nose of the negro is frequently shorter and generally lower and broader than the nose of the white child. These differences increase somewhat with the age of the children.

The lips of the colored subjects are very prominent. This is partly due to the greater prognathism of the alveolar processes, but besides this the lips of the colored children are substantially thicker than are those of white children.

The mouth is broader, and it is also more spacious anteroposteriorly in the negroes. This is due to the fact that in the colored child the palate is more spacious and longer than it is in the white.

The teeth of the negro children are often stronger than are those of white individuals. Irregularities in the setting of the teeth, which are so frequent in white children, are quite rare among the colored. Dentition in the colored is more regular.

The uvula is frequently shorter and stouter in the colored than it is in the white children, and is less frequently deflected in the former.

The lower jaw is often somewhat higher and the lower maxilla a little stronger in the colored subjects than it is in the white.

The ears of the colored deserve special notice. They show in many cases a marked and almost specific character, which is but rarely seen in the white. This character consists in that the helix is bent on itself and compressed at the highest fourth of the ear. The negro ear is also generally somewhat smaller in all its dimensions than the white one. In a certain proportion of cases the ears of the colored children are broader in the lower half than they are in the upper.

The body shows marked differences in the two classes of children, and some of these differences are more marked in children of certain ages than they are in adults. These differences are more marked in the female children than in the male.

In general the body of the negro child shows less adipose tissue and greater muscular development. The average strength in each arm, as measured by the dynamometer, is greater, not only at all ages of the colored children, but also when calculated in proportion to every pound of weight of the body.

The pelvis of the colored child is more inclined forwards than that of the white child, and this is equally true in both sexes.

The arms of the colored child are longer than those of the white, and the arm-spread relatively to the height of the body is greater. Both hands and feet, but especially the feet, are longer in the colored than they are in the white child. The feet are flatter in the colored. The thighs of the negro child show a remarkable difference from those of the white. They appear not unlike the thighs of a frog, being most prominent in the middle. This character is due largely to a higher forward and outward curvature of the thigh bone in the colored. The calves are somewhat smaller in the negro child than they are in the white one.

DIFFERENCES PECULIAR TO BOYS.—The negro boy is generally well built, lean and muscular. The body, unlike that of many normal white boys, and unless deformed by disease, is plastic, straight, and symmetrical. His chest is a little deeper. The pelvis of the colored boy is more inclined, and in consequence of this the lumbar curve is more pronounced and the buttocks more

prominent. The penis of the colored boy is generally longer than that of a white boy of corresponding age or size.

DIFFERENCES PECULIAR TO FEMALE CHILDREN.—The colored girl, before the age of puberty, and sometimes even beyond this period, is a great deal more the shape of a boy than is the case with the white girl. Among white children, girls can be seen to show decided feminine characters; that is, feminine shoulders and thorax, waist distinctly narrowed, large hips and fat thighs as early as eight years of life. Among negro female children the author has not seen these characters become manifest until after twelve years of age or even much later. When seen in profile the greater inclination of the pelvis in the female colored child becomes very apparent.

HYGIENE AND THERAPEUTICS.

Marfan: Therapy of Pertussis. (*Rev. Internat. de Méd. et de Chirurgie.* Vol. ix., No. 7.)

The indications in pertussis are two: to diminish the number and intensity of the paroxysms, and to prevent bronchial infection. For the former, three drugs are of value: belladonna, antipyrin, and bromoform. The objection to belladonna is, that while very useful in some cases, in others the point of tolerance is reached before the dose is sufficiently large to influence the cough. Antipyrin must be stopped in cases threatened by pneumonia, because of its depressant action.

Bromoform seems destined to supplant the other two drugs, and should be given in an oily vehicle, the dose being gradually increased until the paroxysms diminish. It is not contra-indicated in broncho-pneumonia, although it has no curative effect upon this complication. To meet the second indication in the treatment of pertussis, the cases should be isolated from all pneumonia patients, and auto-infection prevented by treating the rhinitis and keeping the mouth and lips clean. As soon as convalescence is established, change of air will benefit the child very greatly, and help to stop the persistent cough.

Rauchfuss: Serum Therapy of Diphtheria in Russia. (*Archives de Médicine des Enfants.* Vol. i., No. 11.)

From a study of the statistics of serum therapy as practiced from the fall of 1894 until April, 1897, it is evident that the treatment has been very favorably received by the practitioners,

and has proven of the greatest of value in treating diphtheria. The mortality of cases treated without the serum during this period was 34.1 per cent., while of the cases in which the serum was used only 14.6 per cent. died. In comparing two epidemics of equal length and severity, one occurring in 1883-4, the other in 1895-6, it is found that the death rate fell one-half (from 43.5 per cent. to 20.3 per cent.) after the introduction of the antitoxin injections. While 81.1 per cent. of malignant diphtheria cases resulted fatally in the earlier epidemic, but 44 per cent. of such cases died in the later one. The fatal croup cases were also reduced to more than half their previous number. Among the cases treated with serum on the first and second day of the attack, the mortality is one-half as great as among those treated from the third to the sixth days.

The question of using the antitoxin as a prophylactic or immunizing measure still remains an open one, although there are many very encouraging observations reported.

Joachim, Georg: A Contribution to the Therapeutics of Intestinal Diseases. (*Allgemeine Medicinische Centralzeitung.* 1898. No. 65.)

Dr. E. Schreiber has recently reported his experience with a new tannic acid combination, a condensation product of tannic acid and urotropin. This preparation which was employed by him in the medical clinic of Göttingen in a number of cases of chronic enteritis, in acute and subacute intestinal catarrhs of adults and children, and also in two cases of typhoid fever, gave excellent results both in the acute and chronic forms, and especially in acute intestinal catarrhs. It proved no less serviceable in diarrhœas of tuberculous origin as well as in typhoid fever.

The unstinted praise of tannopine in Schreiber's report induced the author to also give it a trial. He believes that we have in this preparation an agent which passes undecomposed through the stomach, without exerting any effect on this organ, but which manifests its astringent action in the alkaline secretions of the intestine. For his experiments he selected especially cases of cholera nostras, because this affection well-nigh decimates the children of the poor in Berlin during the hot summer months. Although we have in calomel an excellent remedy against cholera nostras in children, it often enough leaves us in the lurch. In large number of cases, however, in which the diarrhœa has

persisted for several days, the purgative effect of calomel appears dangerous, because under these circumstances the immense loss of fluids demands astringent medication, if we want to prevent the children from dying in collapse. In nineteen such cases the author employed tannopine with good results, the more so, as the majority of medical men entertain more or less fear of the use of opium in small children. But even in recent cases of cholera nostras and enteritis he has used tannopine with much satisfaction in combination with calomel, the latter being employed in so small a dose that only its disinfectant power comes in action. In fifty-one cases of acute intestinal, or gastro-intestinal catarrhs, he used the following formula: tannopine, 0.3 to 0.5 gm. (5 to 7 grains); calomel, $\frac{1}{12}$ grain, in one dose; three to four powders being taken daily. Under this medication, in connection with the customary dietetic regulations, his results were nearly always successful.

The author reviews his experience with tannopine as follows:

1. It is completely innocuous, and can be administered without risk to the smallest infants in doses of 5 to 7 grains, four times daily, and to older children and adults in doses of 7 to 15 grains, several times daily, because decomposition into its two constituents evidently takes place very slowly in the intestinal canal.

2. It is an efficient medicament in all forms of enteritis, its value being doubtful only in the tuberculous form.

3. It is advisable to continue the use of the drug in small doses for a few days after the bowels appear to have regained their normal function.

McKee, James H.: Functional Enuresis: Its Nature and Treatment. (*University Medical Magazine.* Vol. x., No. 3. *Montreal Medical Journal.* Vol. xxvii., No. 3.)

The author, in this paper, endeavors to show that the majority of cases of "functional enuresis" are dependent upon faulty metabolism, and, therefore, that treatment should be directed to correcting the "underlying morbid states" rather than to the symptom itself. In this he is only following in the steps of the more recent writers, though he lays less stress than usual upon the importance of local irritation of the genito-urinary organs as a reflex cause. After a description of the physiology of micturition, the difference between the act in the infant and

the adult is pointed out, namely, that up to two or three years of life it is entirely a reflex action, but after this, and in the adult, the lumbar centre is under the control of the cerebral cells. Why the primitive act is supplanted by the adult process so much more easily and so much earlier in some children than in others, and why, when once acquired, the power of controlling it should be lost through disease not directly affecting the nervous system, is not explained except on the ground of general *malnutrition.*

All cases of enuresis are arranged in five groups:

1. Cases exhibiting marked malformation or disease of the genito-urinary tract.

2. Individuals who present developmental or acquired disease of the central nervous system.

3. Cases in which are found marked anatomical evidences of past or present malnutrition.

4. Cases which present nutritive disturbances which are far less apparent, but which a careful study will reveal.

5. Cases where nutritive disturbances need not manifest themselves in palpable form, but in which we are led to conclude that the nutritive balance of the sensitive neuron has been interfered with.

It is with the latter three that the paper deals, and the author includes them all under the *nutritive series.* In group 3, rhachitis, phthisical or scrofulous types, the subjects of tuberculous disease and the subjects of valvular disease of the heart, are included. Under group 4, we have gastro-intestinal disease, any infectious disease, but especially measles and pertussis, and more rarely gout and lithæmia. The last group (5) embraces the large class of cases in which, either through inherited tendencies or through the weakness of the parents, the child possesses what is commonly called a neurotic constitution. In order to determine this, the existence of neuroses in the family history must be sought for. Or the child itself may be the subject of a neurosis, such as chorea or night terrors. The "reflex factor," which is assigned such a prominent place by some authors, the writer thinks is only of importance as tending to aggravate the neurosis.

From what has been already stated with regard to the etiology, the treatment is naturally directed towards the underlying state as well as to the relief of the symptom itself. "General treatment must be moral, hygienic, and medicinal. Uniform

kindness should be extended to these little cases, though such kindness need not lack the element of firmness." This is perhaps the case among the middle and better classes of society, but when dealing with the class of out-patients met with in hospital practice, where cleanly habits are often only acquired through the inconvenience resulting from their neglect, one is tempted to advise the use of "the rod" as a preliminary before resorting to other treatment. For the worst cases Mitchell's complete rest cure is indicated. Hours of rest, diet, exercise, bathing, etc., are all worthy of consideration. The old custom of waking up the child in the early hours of the night, in order that he may pass urine voluntarily, is considered of value. Of drugs, cod-liver oil and strychnine are accorded first place. The latter should be given in increasing doses until tolerance is reached. Locally, cold douching of the spinal region and genitalia, and electricity and massage, may be tried. The use of belladonna for its local effect is admitted to be often of inestimable value in controlling the symptom. The passage of a sound and circumcision, in the author's experience, are rarely of any value as therapeutic measures.

Johnson, J. B.: Enteralgia in Infants. (*Southern Clin.* 1899.)

Enteralgia, or colic of infants, is most common between the first and fourth months of infantile life. Usually the infant has one attack in twenty-four hours, and the attack may recur at regular periods, either in the morning or in the evening, and may vary not only in duration but in severity. The attacks are always sudden, and the infant, while apparently comfortable, will suddenly utter sharp, piercing screams, which continue for twenty minutes, or perhaps an hour, and are then interrupted by a few moments of ease, only to have all the symptoms of colic return with increased pain and distress. The efforts to soothe or calm the babe are of no avail; it continues to cry and scream; it will take the breast for a minute, and then quickly let it go, and will throw itself back upon its mother's arm, and continue its distressing cries. During a paroxysm the infant will rapidly draw up its legs and knees, then as rapidly extend them, and if the hand of the mother or nurse is placed upon the abdomen, it will often be found to be swollen, and hard.

Passage of this gas, either by the mouth or anus, is usually a sign for an abatement of the paroxysm. Generally the hands

and feet become cold, and drops of cold perspiration break out upon the face. The bowels are sometimes constipated, but most frequently they are loose, and the evacuations present a thin and frothy appearance. The face often indicates, by its expression, the severe suffering of the babe, and is either pale or flushed. While these distressing symptoms always end without serious injury to the babe's general health, they occur and recur regularly at about the same time every day for weeks, and sometimes months; and in order to mitigate the suffering the mother or nurse usually gives the babe stimulating potions or opiates. As a rule the author has regarded these attacks as pure colic, arising from altered or vitiated secretions of the intestinal canal, but cases are now and then met with which are neuralgic, and the distinction which he makes between colic or enteralgia and neuralgia in infants consists in the symptoms. In infantile neuralgia of the bowels there is no escape of gas, the bowels are not distended or the secretions altered, and the abdomen is not distended with gas or flatulence.

If of a purely neuralgic character, these attacks can be not only cured but prevented by the administration of cinchona, or some suitable form of one of its various preparations, but when the attacks are colic or enteralgia, he relies for its cure upon a mixture of equal portions of lactopeptine and subnitrate of bismuth. During the first month of infantile life he usually gives a half grain of each every hour during the attacks. He directs the mother to place the powder made of this combination upon the babe's tongue every hour, and continue it whenever the child is awake until the recurrence of the colic is entirely prevented. After the first month he gives two grains each of the lactopeptine and bismuth every hour. He commences this treatment during the attacks, and after a few doses the babe gets quiet and goes to sleep.

SURGERY.

Delavan, D. Bryson: Present Methods for the Operative Treatment of Pharyngeal Adenoids. (*New York Medical Journal*. 1898. Vol. lxviii., No. 18.)

Just thirty years ago there appeared in the *Hospitals Tidende* of Denmark that epoch-making contribution to medical science, of which it is safe to say that no thesis relating to the department which we represent has ever been more thoroughly appreciated or more widely known.

Since their original appearance the teachings of Professor

Wilhelm Meyer have been adopted throughout the world, and the literature of the subject has become so abundant and so widely disseminated that even the laity are familiar with it.

As we study the advancement made meanwhile, we must be more and more impressed with the remarkable comprehensiveness and accuracy of Dr. Meyer's work. Even at the present time but few of his statements could be taken exception to, and in its essential features his contribution is complete. It would be strange, however, if in the lapse of nearly the third of a century the labors and observations of the world of medicine should not have resulted in adding something to the excellent knowledge of the subject already acquired.

The author lays down two rules which should be followed in operating—thoroughness and humanity. In other words, in operating for the removal of adenoids, the growths must be extirpated as completely as possible, and at the same time with the minimum amount of pain and nervous shock.

The relative thoroughness and safety with which an operation can be performed will depend somewhat upon the kind of instrument employed. A short consideration of this department will be necessary to a full development of the general subject.

Beginning with the finger nail and Meyer's ring knife, an almost unlimited number and variety of instruments for the removal of lymphoid hypertrophy have been devised. They may be classified into several groups—namely, those made upon the principle of (*a*) the curette, (*b*) the forceps, (*c*) the wire loop, and (*d*) the adenomatome.

(*a*) The curettes may be divided into three kinds: The ring knives of comparatively small size, the sharp spoon, and the Gottstein instrument. To this class may be added the finger nail.

(*b*) The forceps may be said to include those instruments which are constructed with comparatively blunt edges and which are intended to tear away the tissue rather than to cut through it. Of these, the Loewenberg is the best example. Of the modifications of it, those of Gleitsmann and Hooper are among the best.

(*c*) The wire snare or loop has been used by some, either in a simple curved cannula or in an instrument especially designed for the purpose. While it has possibilities of usefulness, it appears that they have not yet been realized.

(*d*) By the name adenomatome is meant an instrument constructed more or less upon the principle of the scissors and intended to make a clean incision through the substance of the growth.

As to the finger nail, Gottstein's opinion is of interest. He says: "It is clear that with the finger only a very little can be removed, and, moreover, it must be recognized that from the point of view of asepsis the finger nail is a decidedly undesirable instrument." The artificial finger nail is practically never used.

Of the curettes, the small ring knives are valuable for the removal of small areas of tissue, especially those left after the operation with larger instruments. They are also very useful for operations upon the adult, where, under local anæsthesia and with the aid of the mirror, limited quantities of tissue can be removed at a time with comparatively little pain and irritation. The sharp spoon has been justly condemned because of the amount of bleeding which it causes and the difficulty experienced with it in separating the fragments of tissue from the pharyngeal wall.

Of the instruments of this class, Gottstein's knife and its modifications must claim by far the greatest popularity. It is undoubtedly in more extensive use for the removal of adenoids than any other instrument, and there are several things to be said in its favor.

If we could believe that pain is of no account and speed of more importance than thoroughness, and that he is the most skilful operator who passes the largest number of patients through his hands within a given time, then Gottstein's knife would be ideal. The objections to it, however, are very serious, if we must judge it by the standards which we have assumed, for its use is painful, and it must be seldom indeed that the shape of the instrument is so perfectly conformed to the pharynx, the base of the growth so limited in its extent, and the management of the knife so well directed that the necessary thoroughness can be attained.

In the forceps, modified to suit the size of the pharynx and the location of the growth, the author believes we have an instrument by which the lymphoid masses can be seized and, by proper manipulation, torn away, much larger fragments than the part caught in the grasp of the instrument usually being separated at each attempt. In skilled hands the forceps can be turned in all necessary directions and its blades made to grasp everything in their way. The pharynx can thus be thoroughly cleared, and with the loss of less blood than is common with sharp instruments. The operation, however, is painful.

It would appear that the prime object of the adenomatome is to enable the operator to remove the whole or as much as possible of the growth at one introduction of the instrument. Many varieties of them are of large size or of improper shape, and are not fit to be inserted into the nasopharynx, while their great strength places any unfortunate object which they may grasp completely at their mercy. Even in experienced hands they are probably the most dangerous of this class of instruments. As to their thoroughness, one glance at the construction of their blades will show that there must be certain parts of the pharynx which they can not possibly reach, while the risk of cutting too deeply or in wrong directions is evident. Such instruments are better suited to adult cases and can hardly be intended to be used upon the child.

In the present stage of its development the snare need not engage attention.

Turning now to the means at hand for the saving of pain, we have, of course, the anæsthetics suitable for such cases—namely, for local anæsthesia, cocaine and bromide of ethyl; and for general anæsthesia, ether, chloroform, and nitrous-oxide gas. The use in this country of the bromide of ethyl is neither common nor well understood. A better acquaintance with it would possibly add to its popularity. The advantages of cocaine are that it renders the introduction of the instrument into the upper pharynx much easier and diminishes the pain and local spasm otherwise sure to occur. Its disadvantages are the length of time which it takes to produce its effect, the general toxic symptoms which it often causes, and its failure after all to greatly modify the actual pain of the operation.

Of the three general anæsthetics, nitrous-oxide gas is suitable for short and rapid operations, but it is difficult of administration to a patient who is too young to follow the directions of the anæsthetist, and to those in whom the upper air-passages are seriously obstructed. Chloroform is attractive but unquestionably dangerous, and, on the whole, not superior to ether. In the hands of a skilful anæsthetist and properly administered, ether will, as a rule, prove most satisfactory. Under deep anæsthesia the pharynx is completely relaxed and ample time is afforded for all the care and thoroughness necessary, the patient meanwhile being free from pain. In suitable cases the patient can be profoundly anæsthetized within three minutes by the administration of nitrous-oxide gas followed by that of ether, according to a method lately introduced from England by Dr. T. L. Bennett.

The theoretical objections that ether is dangerous, that the children are apt to be injured by it, and that its action increases the amount of bleeding at the time of the operation, are not true, nor would they be likely to be made by any one who had had practical experience with its use. If more blood flows with

anæsthesia than without, it is largely because under the former condition a much greater amount of tissue is removed. The author has never had the slightest bad effect from it as applied to children in his own practice, in the course of many hundred operations performed under it, nor has he ever heard of any serious accident from its use under similar conditions in the hands of a competent and experienced operator. Indeed, the importance of its use is well attested by the fact that the most distinguished authorities upon the subject, such as Morell Mackenzie, Greville Macdonald, Felix Semon, Mark Howell, and Watson Williams, of England, Walker Downie, and P. McBride, of Scotland, French, of Brooklyn, Ingals and Casselberry, of Chicago, and Knight, of New York, all agree as to the necessity of anæsthesia in the more difficult cases.

Finally, greater caution than is usually employed should be taken in the after care of the patient. He should not be at once dismissed, but should be put to bed, and kept there for at least twenty-four hours. This precaution lessens the possibility of bleeding, prevents infection, guards the patient against taking cold, and greatly reduces the general depression due to the slight shock of the operation. It has been his custom for many years to insist upon it in private practice and, when possible, at his clinic as well.

Studying carefully the statements which have been made in this paper, it would seem fair to draw the following conclusions:

1. To secure the ideal conditions for operation, the patient should be in a state of complete anæsthesia.

2. To secure the most thorough removal of the growth, the blunt forceps is, on the whole, the most effective instrument at our command.

3. Where for any reason (age or superior strength of the patient, or special contraindication), general anæsthesia is not desirable, and some form of instrument other than the blunt forceps is to be preferred, the principles which have been insisted upon should, so far as it is possible, be carried out. No better method of operating has ever been devised than that so ably and successfully adopted by Dr. Hooper. Ten years' constant use of it and contrast of it with other methods have more and more convinced the author of its superiority. Twenty years' experience with imperfect methods cruelly applied has equally impressed him with their wrongfulness. Most important of all, he believes that the operation for the removal of adenoids is not the simple and easy thing that many suppose it to be, but, on the other hand, that its successful performance requires considerable knowledge, experience, and skill. For work of the best class excellent methods are at hand. It is time that they had been recognized, and that others less worthy should give place to them.

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METHODS OF INSTRUCTION IN PEDIATRICS.

THE PRESIDENT'S ADDRESS, DELIVERED AT THE ELEVENTH ANNUAL MEETING OF THE AMERICAN PEDIATRIC SOCIETY.

BY W. P. NORTHRUP, M.D.,

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GENTLEMEN—The American Pediatric Society is made up largely of teachers of pediatrics, and it would seem that a discussion of methods of instruction may be profitable. Of course there may be many methods, all successful.

There are, each successive year, more subjects and more details for students to acquire, from primary departments to post-graduate. The number of years allowed to accomplish this task has been increased, so that the kindergarten begins earlier in life, and the professional man is ready to enter his work later in life. The great problem always remains, how to enable the student to apprehend and retain these details. There is progress in the art of teaching, a tendency to simplify, to make easy, to illustrate, to demonstrate; a progress in the art of lightening the task of the student.

The most difficult things to learn have been the multiplication-table and *materia medica;* the easiest, geography and obstetrics. The modern teachers assure us that map-drawing makes pleasant and lasting the acquisition of geography. Obstetrics is easily in the fore from the facility for demonstration by pictures and manikins. Persistent reciting in unison, we are told, commits to the ear the keeping of the sevens and the nines. There yet remains the unlightened task of *materia medica.*

A discussion of the methods of teaching the subjects of especial interest to us may be worth our time. My particular wish is to learn the methods employed by each here present, to

resolve this morning's session into a normal college of teachers of pediatrics.

When I was a student the professor of general medicine lectured on chicken-pox and measles, the professor of pediatrics held once a week a clinic on such cases as presented themselves in the out-patient department. This condition in the College of Physicians and Surgeons existed in 1880. Since that time the subject of pediatrics has grown, its position in all schools has been advanced, and to-day it occupies a sufficiently prominent place in most colleges. Our illustrious colleague, Dr. Jacobi, was the pioneer in pediatric teaching and has helped us to all that which we later teachers enjoy.

What place should the subject *pediatrics* have in the curriculum?

In an undergraduate course, what number of lectures and what amount of time should be given to the subject of pediatrics?

In answering these questions I have drawn upon my own experience in the last year. Have sufficient time and facilities been given the pediatric department to satisfactorily cover the ground, and how do the facilities of the pediatric department compare with other special departments? In other words, what is the recognized grade of pediatrics among the specialties at this medical college?

This point is of interest, for I know that not all medical schools have been equally just or generous in their recognition of pediatrics.

The divisions of medical teaching are: General medicine, general surgery, obstetrics, pediatrics, ophthalmology, orthopedics, neurology, laryngology, otology, gynecology, mental diseases, dermatology, genito-urinary diseases, electro-therapeutics.

The principles and practice of medicine and surgery constitute a very large number of subjects, and are assigned four lectures and two recitations a week, besides clinics and section teaching. Obstetrics, three lectures a week, recitations, clinics, and section teaching. Gynecology, one lecture a week, with clinics and section teaching. Pediatrics, one lecture, one clinic, section teaching. Therapeutics, one lecture a week, one recitation a week. Orthopedics, one lecture a week and one recitation a week. Genito-urinary disease, one lecture a week.

Nervous diseases, once a week, section teaching. Mental diseases, once a week, half a year. Otology, once a week, half a year, section teaching. Dermatology, once a week, section teaching.

It appears from this showing that pediatrics shares with gynecology the fourth place in importance in the whole scheme of instruction, general medicine, general surgery, and obstetrics taking precedence; or, if we attend to special subjects strictly, it shares with gynecology the second place. Obstetrics may well be allowed first place as it has always been; after pediatrics come neurology, laryngology, genito-urinary diseases, mental diseases, otology, dermatology. Pediatrics also requires compulsory attendance in third and fourth years and is a subject for final examination. The professor of pediatrics is not a member of the governing faculty. He and his chief of clinic receive salaries.

While associated with the late Prof. J. Lewis Smith, I was assigned the subject of the exanthemata and acute infectious diseases—didactic lectures only—from the beginning of the year, once a week, up to Christmas. In thirteen lectures I covered the subjects: Measles, German measles, scarlet fever, small-pox, chicken-pox, vaccinia, diphtheria, mumps, whooping-cough, cerebro-spinal meningitis (its pediatric features), tuberculosis of the glands.

Though this averages nearly a subject to a lecture, it is obvious that many of the subjects would not require an hour. German measles would, for instance, need but a few words after a full discussion of measles. The number of lectures was limited, but the lecturer was to cover as many subjects as he reasonably could, and no more, leaving the others to the professor of general medicine. Small-pox was brought in because of its differential relations to chicken-pox.

Here, then, in thirteen lectures was taken a large portion of the acute infectious diseases of children. Thirteen lectures were sufficient for presenting the subject didactically.

The course of instruction at present includes: Didactic lectures; clinics—full class; clinics—sections of class; section teaching in out-door department. This course is carried out in the general lecture room, in the out-patient department, at the Willard Parker Hospital, and at the New York Foundling Hospital.

DIDACTIC INSTRUCTION.

There is a wave of sentiment against didactic teaching. No doubt the reaction against the former complete dissertations on disease is justified. These are days of improved text-books. The didactic lecturer has yet a function. It is this: To present to the beginner the salient points of a subject, to emphasize the few points on diagnosis, symptoms, course, and treatment, which are uppermost in the mind of a man experienced in observing and teaching. As Prof. Dalton once said, students occasionally mention all the muscles of respiration, not forgetting the accessories in the neck used in utmost effort of inspiration, and omit to make any mention of the diaphragm. An average mature student would emerge from studying an expansive treatise on pneumonia, for instance, with an ill-assorted mass of details, most of which would drop out of memory in actual experience with the disease. To use an every-day expression, essentials "on which one travels" are few in meningitis, pneumonia, etc. It is these essentials which it is the function of a lecturer to point out and emphasize before the beginner.

I am going to maintain strenuously that in teaching undergraduates, didactic lecturing is important, and is not to be superceded; it may be modified.

Judging from Niemeyer's book on general medicine, I should estimate him to have been an ideal lecturer. I commend his way of setting forth the essentials of diseases.

The pediatric course comprises all the instruction provided by the curriculum upon the following subjects: Diphtheria, measles, rubella, scarlet fever, chicken-pox, small-pox, vaccina, mumps, whooping-cough, rickets, scurvy.

Features peculiar to children are taught in the following (though these are included in lectures on adults): Cerebro-spinal meningitis, tuberculosis in children, tuberculous meningitis. These subjects are taught both by didactic and clinical instruction.

The diseases which really require both didactic and clinical instruction, which, in fact, no amount of didactic teaching alone could inculcate, are: Measles, scarlet fever, small-pox, chicken-pox.

My effort is to have the student know these well enough to make a diagnosis upon them. He can say of a multitude of

eruptions that they at least are not of the exanthemata. Smallpox is important to students for the same reason.

The following subjects are taught clinically: Diseases of the mouth, pharynx, and larynx; diseases of the stomach, intestines, bronchi, and lungs; empyema and pleurisy, purpura.

Clinically the following subjects belong to the pediatric instructor: Heart anomalies (congenital), cretinism, vaginitis, hydrocephalus, chorea, convulsions, tetany, worms, parasites.

CLINICAL INSTRUCTION.

Clinical instruction needs little discussion. It needs no apology and no emphasizing. It cannot take any place in our present college instruction which will render didactic lecturing unnecessary. It is impossible to pursue a systematic course suitable to undergraduates, a purely clinical course, and have illustrative cases at hand when needed. More of this later.

First of all, the hour of a children's clinic must be as near as possible to the noon hour. After the father's dinner has been set, the mother can find time to take the child to the dispensary. Two o'clock is the hour at our service. Cases collected from twelve o'clock can be induced to remain until two o'clock to "see the professor." It would be even better if one o'clock could be the hour, but it is too early for the students.

The lecture room should be directly connected with out-patient rooms, with dressing-rooms convenient and comfortable. It often happens—so often that it has made its impression—that the best cases come in at the very last moment, before or even after the lecture has begun. In our new building the lecture room is directly over the out-patient department; dressing-rooms are provided, and abundant space at the side of the "pit," where the collected patients can wait. Mothers will wait patiently if they are witnesses to the clinical lecture, see what is transpiring, see that they are courteously treated, and that they are getting special attention. Prof. J. Lewis Smith adopted this method of holding his clientele. Before he adopted it he often found, when he wished to have one of the new patients ushered in, that every soul of them had decamped. The children are less frightened if they enter in groups, and have opportunity to become gradually accustomed to the presence of a large audience. Besides, every teacher is familiar with that pre-entrance murmur of restless students.

This is less apt to frighten patients if they have company of their own kind.

Our practice is to lay out a plan for systematic lectures—the exanthemata, for illustration—pursue it when practicable, but interrupt the lecture at any time, or any number of times, to show a desirable case. A typical case of any disease not previously fully illustrated takes precedence of any subject in hand. If, for instance, the subject of lecture were measles, and an assistant should whisper that a case of scurvy had come in, measles would be quickly set aside, and the case demonstrated. This would be true of nearly any typical case.

The Tuesday two o'clock all-the-year lecture at the college is didactic and clinical in the ways suggested above. All the graduating class is present during the last year, the audience varying from 200 to more. The methods at that hour are of necessity adapted to a large audience, numbers making it impossible to show a case to each individual.

The O'Dwyer Memorial Clinic has been instituted, in connection with the college department, during the last year at the New York Foundling Hospital. This is purely a clinical lecture, with accommodations for 100 men, sufficiently near the wards, so that children sick with acute pneumonia can be brought to it and laid on the elevated bed. Here with little or no disturbance the case can be inspected and the findings given. It is peculiarly a clinic of acute diseases. Empyema have been here operated on; lumbar puncture, gavage, and lavage performed. Of all the features of teaching, this clinic has been to me the most satisfying. The cases have been followed in their history; they are bed cases, are clean and tractable.

SECTION TEACHING.

Section teaching is an important supplement. It means physical examinations, actual contact of the student with cases under competent assistants. Sections are taught in the wards of the Foundling Hospital and in the out-door department. In such matters as bowel and stomach-washing, gavage, lumbar puncture, it is necessary that the number should be limited, and for the student to get very near the patient, and desirable that each student should be able to repeat the demonstration. The section rooms of the out-door department are so placed side by side that the pediatric room is adjacent to the surgical, large,

sliding doors separating the two rooms; and the pediatric and surgical classes meet at different hours. The pediatric room has a small ante-room in which patients who are soon to be examined prepare for examination. So a new patient first enters the general waiting-room, is registered, if assigned to the pediatric room, waits upon the benches before the door. Certain ones are taken into the ante-room, thence into the main room, and if further examination is desirable, upon a table, for instance, or if students are present, they can there be carefully examined. The light is good, there are tables, running water, and, when ready to depart, the patient can make an exit into the main waiting-room without passing through other rooms in which further examinations are going on.

I am much interested in some proposed changes in the Johns Hopkins out-door department, in which general medical work of adults is to be carried on. It consists, practically, in a doubling of the rooms we have just mentioned, since males and females must have separate dressing rooms. The general plan is much the same. For pediatric work it seems to me an ante-room, a main room for histories and general examination, and a clinic room serve very well. It is desirable to have it so arranged that patients can progress from room to room without retracing their steps. They make confusion. One mother disturbs another, one baby another, and, as you all remember, they are sure to forget some article, and burst in upon an examination to recover it.

APPARATUS EMPLOYED IN TEACHING.

I regard the stereopticon as a notable aid to teaching. The eruptive diseases, small-pox, chicken-pox, vaccinia erythema, associated with vaccinia and antitoxin, have been shown in the large lecture room with great satisfaction. A picture in a book can be reproduced on a lantern slide and shown as well five feet in diameter as in the pages of a book. It is easy to secure pictures of small-pox, for instance, covering every day's progress from first to twelfth day of eruption. These can be examined by 250 students as the lecturer points to the different characteristics in the only safe way, and it proves satisfactory. Futhermore, the sections themselves of ricket bones, the cartilage stained blue and bone red, can be placed before the lantern and give an excellent picture of the lesion. I have one such specimen

which I esteem much more valuable in illustration than any other I have seen. Only a large colored photograph could hope to approach it; no fresh specimen or ordinary photograph would. I am of the opinion that there is no way to focus the eyes and attention of many students upon one point so satisfactorily as by stereopticon illustrations. Large sections of lungs, pneumonic and tuberculous, sections of scurvy bones, full-length photographs showing deformities, are well illustrated in the same way.

I have a typical cretin which I show every year; it is most excellent for illustration. My plan is, however, later on, to have a series of lantern slides made, illustrating different features of the disease, to show many cretins at the same time. Such a series can be gone through with fifteen minutes before showing the one case, and the whole subject will be set forth in brief and in a way to be easily apprehended and remembered by most students. This is one of the subjects in which few words beyond the points for diagnosis are profitable for an undergraduate. I hope next year in the new building to be able to promptly darken the room and use the lantern for ten minutes in the midst of the lecture, whenever I wish to illustrate by pictures. Passing pictures about a large class is not satisfactory. By the time pictures have gone to three or four men the discussion of the subject has advanced and the students, always bent on securing notes, are writing industriously.

Fresh pathological specimens. The old-fashioned method of producing material, fresh, red and dripping, has a limitation. Fresh lung specimens are good to fix in the student's mind just how the viscera look when first removed, but many times do not give a very satisfactory view of the lesion. Take for instance a tuberculosis of the lung with pneumonic consolidation and tuberculous bronchial lymph nodes. Such a lung can be made to show the lesion infinitely better by washing away some of the blood and filling the bronchi with a weak preservative—alcohol or formalin. Then appear the tubercles, the dark masses of pneumonia, the cheesy masses, well differentiated. A little care in washing, stretching and mounting intestines, in sawing and preserving bones, in washing and preserving in weak fluids lungs, liver, kidneys, and brains, make them show the lesions to advantage.

A little attention, in short, to the advanced methods of

preservation and exhibition used in pathological museums, in pathological society presentations, will make clear what is here meant.

There yet remains one feature of teaching which, in a further development of a four years' course, is desirable. It presumes more time than now is at our disposal. Recitations remain to be added. Systematic quizzing by an assistant is really needed. I have been pleased to find in my own experience that questioning a class upon the current lecture topics is quite popular with the students.

It is the wish of the writer that this setting forth of the methods of teaching employed in one medical school may call out those employed in others; one might rather say the methods allowed by one medical school as compared with others. Very few here can say that the policy of the individual school in which they teach is all that they could wish. Some college faculties give to pediatrics all the importance that the teacher could reasonably claim, others are not liberal. This subject is brought up at this time and place in the hope that there may be in some degree started an improved degree of liberality.

I for one would be very much interested to learn the methods employed by different teachers. We would all be interested to learn what status each teacher has been able to secure from his college management; in what way they can reasonably expect to improve it; and, finally, what they would regard as ideal methods.

57 EAST SEVENTY-NINTH STREET.

DISCUSSION.

DR. ROTCH.—I will simply state what has been done in the way of teaching pediatrics at Harvard University. The same condition existed there in its early history as did in New York: that is, very little time was given to this subject. The time has gradually been increased and the importance of the subject has been more fully recognized, until it now holds the same position as any of the other branches of clinical medicine or surgery, although it does not require the same amount of time. There is continuous teaching from October to June, that is, for eight months; five exercises a week are given during this time. The examination is compulsory, and lasts for two hours. The

teaching is divided into didactic lectures, clinical instruction, and what we call clinical conferences.

The main part of the time is given to clinical instruction, and it is so arranged that the ward material can be used in connection with that of the out-patient department. The lecture room is in the hospital itself. The Children's Hospital is devoted to individuals over two years of age, and the Infants' Hospital to children under two years. The proportion of didactic lectures and recitations to clinical exercises is as follows: There are 160 exercises from October to June, and of these twenty-four are didactic lectures, twenty recitations, and four clinical conferences.

The conferences are few in number, but the men are incited to do well, and as a reward are given the prominence of having a case to investigate, write up, and read before the rest of the class. Their work counts toward their examination at the end of the year. The students are encouraged to discuss the paper.

At the beginning of the course the time is devoted to teaching the students what is especially distinctive of the early years of life; and having been well grounded, first in what a healthy child should be, they are then taught about the diseases. Especial attention is given to the contagious diseases. We have in the Boston City Hospital a department for receiving all the contagious diseases, and the students are there taught directly under an instructor, who is one of the instructors in the pediatric department. The students are thus brought in direct contact with these diseases.

We also have opportunities to use the lantern and slides, and this method is becoming more and more valuable. By having our lectures in the hospital, we also have the opportunity to show anatomical specimens.

The clinical conference consists of the whole class, I being the presiding officer, and all the instructors and men supplying material to the hospital are invited to be present. We pick out four or five men who are given cases in the wards to study and write up. After the paper has been read, the subject is opened for discussion, first by the students, and, after they have finished, the whole corps of instructors enters into the discussion, and not only discuss it with the students but with each other.

The recitations are also well arranged; for instance, I give my didactic lectures in the beginning of the year—October, November, and December; and in January Dr. Wentworth takes up the subjects I have been lecturing on and illustrates them with the clinical work. Finally, the month of May is devoted again to the review of the whole subject, with a quiz course to prepare the men for their examinations. All the instruction in this subject at Harvard is given during the third year, as we do not consider pediatrics as one of the special branches, but as a part of general medicine.

DR. CRANDALL.—What subjects constitute the didactic course?

DR. ROTCH.—The whole ground is pretty well covered. We first tell the students what they shall see in the healthy child, and then as far as we can cover all the diseased conditions. We have only twenty-four purely didactic lectures, while we have 112 clinics.

At Harvard, by a long process of pushing and fighting for it, pediatrics is now recognized as one of the important branches, and the professor of pediatrics holds a chair in the faculty on an equality with any other member of the faculty, and receives a salary also.

DR. GRIFFITH.—I wish I could say such encouraging things as Dr. Rotch has said. Harvard has always been noted for its progressiveness and Philadelphia for its conservatism. While the latter is a good thing, it may be pushed too far. The time given to pediatrics in the University of Pennsylvania is not so deficient as you might infer from this statement, but I know it is not as great as at Harvard, nor as great as the subject deserves.

When I graduated in 1881, there was no professor of pediatrics; there was, I think, a lecturer in the spring course which existed at that time, and any one might attend who wanted to. The professor of obstetrics gave a few, two or three, lectures on the diseases of children. I think I heard him give one lecture on whooping-cough, and he had two children present supposed to have the disease, but who could not be induced to whoop.

Finally a clinical professorship was established and that has been slowly increasing in importance. When I was first appointed to the position some years ago I had an hour a week assigned me to lecture, but attendance was not compulsory and the class could come or not as it pleased. There was no required examination, except in so far that I had certain questions to submit to the professor of medicine and they were put into his written examination. That of course made the students wish to attend the lectures. A few years ago they started the plan of making certain studies elective and placed pediatrics among those. The men are required to choose certain electives, their choice being entirely free, and I am very glad to say that I think most students realize thoroughly the importance to them of diseases of children, as my number of elective students has always been large. These elective students receive regular, systematic, ward-class work, which I give at the Children's Hospital, because I have better opportunities there. I use almost altogether there the bed service, but make use of the out-patient department when I please. We have a little clinic room where I take the students in sections and I devote three days a week to this throughout the whole term. The whole class is privileged to attend the clinics and I notice the faces of many men at the lec-

tures who are not elective students. In fact, I will do them the justice to say that the attendance upon the clinics is excellent and most encouraging. The entire class comes in sections to the pediatric work in the University Hospital but this is so infrequent for each man that I do not consider it of any special value.

The lectures are either clinical or didactic, as I please, and I follow very much the plan you described yourself. I take up a definite scheme, with certain selected topics, but interrupt this at any moment, depending upon the cases that may present themselves. In the ward-class it is purely bedside work, and I make it a point to have the students examine the cases for themselves, and to ask questions of them and have them question me. I try to make it as informal as possible and try to make the men think for themselves as much as possible, placing them in the position of young physicians dealing with their first cases.

I hope the time will come when matters will be changed at the University of Pennsylvania, when pediatrics will be recognized as a full department and be compulsory for all students. I think, however, we are getting it on a constantly firmer and better established basis.

DR. CHAPIN.—Any discussion of post-graduate instruction must begin with a consideration of undergraduate work. I was for five years engaged in teaching pediatrics at the Woman's Medical College of the New York Infirmary, and at that time the scope of instruction was on a better foundation there than in any institution of the kind in the country. For the last fifteen years I have been teaching post-graduate students, and every year instruct over five hundred of these men from all parts of the country. I would like to say most emphatically that in my opinion the instruction is most inadequate in most of the colleges of the country. The trouble seems to lie with the college authorities, who have not properly appreciated the importance of the teaching of pediatrics. Two or three years ago this was brought to my mind in a startling way. I was on a hospital examining board, when forty physicians came up to be examined for three or four vacancies. I took down the names of the colleges that these men came from, and every important university in the country was represented—Harvard, Yale, McGill, Physicians and Surgeons of New York, Bellevue, University of Virginia, University of Pennsylvania, and several western universities. These men were about the best output of these colleges, and there was not a single one of them that had any proper conception of the diseases of children; not a single one could give correctly the physical signs of fluid in the chest of a baby.

I am very glad to hear about the improvements that are taking place in undergraduate instruction; but all I can say is that so far they have not borne much fruit, and it will probably

take a number of years before they do. I want to emphasize the importance of teaching them theory before they go into clinical studies, for I find that the majority of them are not well grounded. They do not know the difference between disease as it occurs in infants and adults; they have not been instructed in the normal physiology of infancy and the different manifestations of disease at that age. Until they do have such instruction the improved clinical work is not of much value.

The whole point hinges upon the conception of college authorities as to the importance of pediatrics and its proper place in the curriculum. It has frequently been tacked on to obstetrics, and my opinion is that the true importance of pediatrics will not be recognized until it gets into its proper place, and that is as a *branch of general medicine.* The diseases of early life are the same diseases we have later on, but they have a different pathology, a different symptomatology, and require a different treatment; and, instead of treating this subject as a specialty, it should be considered as a branch of general medicine, and a good part of the time devoted to the teaching of general medicine should be given to a consideration of disease as it appears in early life.

The majority of physicians when they leave college are going to take part in the general practice of medicine, and a large part of their work will deal with the diseases of children. As at present taught, they are unable to properly cope with their work. I do not believe this branch of medicine has secured a sufficiently important place in the curriculum. It seems to be in the same grade with the diseases of the throat or ophthalmology in most of the colleges; and in one, we have just heard, it is an elective study. A man is preparing to go out and practice medicine, and the branch of most importance to him is made an elective study—a sad commentary on the management of the college, I think.

Now as to post-graduate work. As I meet these men I find them poor in diagnosis—very poor—and their treatment is rather apt to be heroic. I find that they wish to see a great many cases, and they do not wish for instruction in the theory of medicine at all, for they think they know it. In a post-graduate institution there is no compulsion to attend, and a man must cater to his audience. I find that they all want to know about the subject of infant feeding, and they do not want to hear a long dissertation upon any case.

In closing, I hope the American Pediatric Society will go on record as insisting upon a more adequate teaching of pediatrics in our colleges.

DR. BLACKADER.—I have had much pleasure in listening to Dr. Northrup's paper on the teaching of pediatrics. I agree with the position Dr. Chapin has taken in his remarks: that

pediatrics is not a specialty in the same degree as gynecology or laryngology, but is to be regarded rather as a department of general medicine. This is the position which it holds with us in McGill University. In connection with the course in general medicine, a series of didactic lectures is given to students in the fourth year on the diseases of infancy and childhood. In this special course an effort is made to describe to the student not merely the diseases special to infancy and childhood, but to point out to him how in diseases common to both infancy and adult age the symptoms met with in infancy differ from the symptoms recognized as typical in adult age. Clinical demonstrations on the examination of sick children are given to some extent in the children's wards of our hospitals, but chiefly in the out-patient rooms, where there is a distinct children's clinic. At this out-patient clinic, the fourth year students are taken in groups of four or six twice a week during the entire session.

DR. FORCHHEIMER.—It is not fair to judge undergraduate teaching by the men that attend post-graduate clinics. It is not probable that the best men go there. If we should judge the teaching of the post-graduate courses by the men we see coming back from there, our judgment of them would not at all be favorable

You have heard from the representatives of some of our large universities and I should like to tell you something about a college that has been run without an endowment for at least forty years and of the methods we have employed in the teaching of pediatrics. I believe firmly that pediatrics is a department of internal medicine and should always be that and not a specialty. Twenty-four years ago, when some of us came home from Europe together, we were very enthusiastic about teaching and I was soon after appointed to lecture upon the diseases of children and continued until I found something better to do; for three years devoting to this subject two hours a day throughout the course. Gradually the matter shaped itself more definitely and I was reduced to two clinical lectures a week, but during the last four years the chair of diseases of children has assumed different proportions and they have now given me thirty didactic lectures, one clinical lecture a week for half the course, and, in addition to this, the out-door service, retaining the small lecture room service that we learned to know of in Vienna. I think we have thus obtained very good results.

DR. CHAPIN.—I want to point out an essential distinction between post-graduate and undergraduate students. The first come as they please, pass around from one teacher to another and are responsible to no one. The undergraduate student is responsible to his teachers or to the college which says what he must do in order to secure his degree. So I waive responsibility

for post-graduate students and in turn hold the colleges responsible for the undergraduate.

DR. ROTCH.—Our object in teaching students is not to drive them into a specialty, but to teach them to take care of children. It is a grave question whether a man is not a better practitioner among children if he also works among adults, but that has nothing whatever to do with the teaching of students. We will never have the proper teaching of any branch unless we have a man devoted to that teaching, and I do not think it is wise to merge the teaching of diseases of children with the teaching of general medicine. Not that they may not come together in practice, but they should be *taught* by different men, because no one has the time to properly teach two branches. I do not mean that it is to be thought of as a specialty, but an individual will do better work if he devotes his time to the teaching of a special subject. As to the question of finding something better to do than teaching pediatrics, I think we should oppose that in every way. If a branch of medicine is worth practicing, or worth considering at all, it is worth teaching. What I have done at Harvard is to try to lay out a proper course of teaching. I think that probably a great many of our graduates have been found wanting when they have appeared at post-graduate schools and I think a great deal of that has to do with the teacher.

DR. FORCHHEIMER.—I spoke of something better to do, because so far as I am individually concerned I would rather teach other things than diseases of children alone, and it must be remembered that the colleges in different parts of the country are differently constituted. The three fundamental branches are medicine, surgery, and obstetrics; and when I said they gave me something better than the diseases of children alone, I thought they did, because the subject was more important.

DR. ROTCH.—We are discussing the best methods of teaching. Where a man's heart is, there will his best work be done. I do not believe a man can teach two subjects, and do them equal justice.

DR. ADAMS.—I am impressed with the belief that the matter does not rest so much with the colleges as with the men themselves. We have it in our own hands to control this matter; but the trouble is, so many men fall over one another to get hospital and college appointments, and after securing them from boards of laymen, submit to the greatest indignities, that the authorities have no difficulty in filling vacancies.

I had satisfaction in holding the second full professorship of pediatrics in the United States. Shortly after I graduated from Georgetown University I was given a lectureship there, and remained for two years. I continued teaching there until

1884, when I resigned, and with six other men organized the medical department of the National University. We made it a day-school, and for the first two years I lectured to one man. At the end of that time we found it impracticable to continue the day-school, and it was converted into a night-school. After eight years' teaching there, Columbian University elected me to a clinical professorship in pediatrics, and Dr. Acker was elected a clinical professor at the same time. We lectured in that school for two years, when we found that the faculty was paying a salary to the men who were lecturing on minor subjects, and the clinical professors were not getting a cent. I started a strike, and Dr. Acker and myself, with several others, controlling a very large part of the clinical material of several hospitals, joined forces.

We consented to remain on two conditions: That we have a voice in the graduation of men, and that we were paid for our work. While they were considering the matter, Georgetown University offered me a full professorship on an equality with the other members of the faculty and a full share of the receipts. I took the matter under consideration, and during that time the Columbian representatives returned an answer that they considered we were right, and that they had decided to pay us five dollars per clinic. Five dollars for two hours' work was not my price. They held a meeting, to which they invited Dr. Acker and others, and I believe they finally agreed to pay them and make their positions more liberal.

So far as my personal method of teaching is concerned, I have pursued a course that has been very gratifying in the way the men seem to be equipped. I have the third and fourth year men, and I have two physicians associated with me as clinical instructors. The fourth year men are divided into sections, and my first assistant takes a division of these men with a patient from the ward and allows them to make a thorough examination and diagnosis. In the meantime, a third and fourth year man are assigned to some case in the ward. The third year man takes notes, while the fourth year man makes an examination and asks questions of the instructor. At the end of the hour, these men with the nurse and myself take the case before the class. The fourth year man goes to the board, writes out the history, diagnosis, etc., and I ply him with questions, making him explain everything of the physiology and pathology connected with the case; and if he fails, I call on other members of the class. Last year each man had the opportunity of examining in this way five different patients with different diseases. If any interesting case comes in which I do not think will keep over for the next week, I bring it before the class and explain it. In regard to hydrotherapy, etc., I make the men as far as possible do the practical work.

The third year men are given to the second assistant, who drills them in the preliminaries of medicine, with particular refer-

ence to the diseases of children. This is as near a practical method of teaching as I can think of, and I have often been surprised at the diagnosticating that some of these men can do.

DR. COTTON.—I believe that personal equation has a great deal more to do with this than anything else. The majority have stood at the door humbly knocking and presenting their wares until the authorities, the governing boards, have opened the door and invited them in. It seems to have been difficult everywhere to convince the faculties of the importance of teaching pediatrics. I believe it should not be insisted upon as a specialty, but that it is a branch of the department of medicine and that it should be presented by a man whose heart and soul are in it.

Since this is an experience meeting and the president requests us to relate the status of pediatrics in our different localities, I would state that so far as Rush College is concerned, when I graduated there in 1878 Prof. Miller was recognized as the professor of obstetrics and diseases of women and children, and I do not remember that in the two courses of lectures I heard he mentioned children, except once when he exhibited a case of gastro-enteritis. In 1880 Prof. Knox was given the chair of diseases of children and I was invited to be his assistant. About 1885 an examination was allowed to the department of diseases of children and it counted some small fraction in the grand total of requirements for graduation. The senior class was divided into sections of ten for dispensary teaching and an amphitheatre clinic was given once a week. A certificate was given by the dispensary physician to show that the student had attended at least 75 per cent. of the clinics.

In 1893 Prof. Knox died and I was made clinical professor of medicine. In 1894 a separate chair for pediatrics was started and time was allowed for thirty didactic lectures and a clinic once a week. The students took notes at the clinics and as a part of their examination were required to present the history of a case seen in the clinic.

In July of this year we start on a new schedule and for the first time I have succeeded in securing a junior course which I consider very important. I have laid out a course including anatomy, physiology, and hygiene of infancy and childhood with all that that means. Two instructors will drill the students, assigning each a lesson upon which they will be quizzed upon a later day. They must pass an examination before they can enter the senior class. The clinics will be optional to the juniors but compulsory for the seniors. In the clinical amphitheatre the senior course is given by an advisory staff. Four students being called upon in alphabetical order, they retire to an adjoining room, where one is given absolute control of the patients to decide what cases are proper to send into the clinic, etc. It is

his day and the other three are subordinate to him. He assigns the other students to other cases, to write up their histories and present them later in the amphitheatre where the consulting staff is prepared to hold the clinic. I have been told by many of the students that this method is beneficial, in that it stimulates them to their best efforts.

The conference course has been a good thing for us, I think. I ask for all students who are willing to take an out-patient case and study it thoroughly to send in their names. From this list one is called from time to time as the cases present themselves. He follows up the case, and if a fatal result comes he has a *post-mortem* made. He is encouraged in every way to work the case up and he announces when he is ready to present the history of the case at conference. This is valuable, I believe, because it gives the student a little foretaste of what he must do when he gets into practice.

In regard to the relationship of the professor of pediatrics, when I was called to this chair, I dropped the position of professor of *materia medica* and soon realized that there was a string to my new position. I was not invited to the faculty meetings to discuss important matters. I found that I was a member of the faculty, but not of the executive faculty. I think the best place for pediatrics is a connection with the chair on the practice of medicine. If the teacher of pediatrics cannot convince the students of the importance of that branch it ought to drop behind. When we were arranging the curriculum this year we adopted the university plan of making as many branches as possible elective, and we now have practically all but the four primaries elective, and I am willing to take my chances of the students choosing pediatrics.

DR. ROTCH.—Would your university give a man his degree without taking the course in pediatrics?

DR. COTTON.—It never has done so.

DR. ROTCH.—It would seem to be possible and I think that would be going backward. Nine men came up at Harvard this year whose degree depended upon their passing the examination in pediatrics. They cannot get the Harvard degree without passing the examination on pediatrics. I believe a great deal of harm is done by sending men out in the community to practice without a knowledge of the diseases of children.

DR. COTTON.—I think it would be difficult to figure out any important branch that the student could entirely elude, for by doing so he would lose so many points he could not obtain his degree.

DR. ROTCH.—Students are not fitted to choose for themselves what they shall take. They always elude if allowed to elect their studies.

DR. COTTON.—The point I want to make is this—that we have duplicate courses in most of the departments, given by duplicate professors, or a professor and associate professor, and the student may be allowed to elect whether he will take his pediatrics in the fall and winter under Smith, or in the spring and summer under Brown, and I believe it will help the professor to have the competition within his own faculty.

DR. CRANDALL.—An interesting point already referred to is the fact that in many instances the students are more progressive than the colleges, and seem to realize more clearly the need of pediatric instruction than does the faculty. I have observed this in several institutions. In the post-graduate schools the classes in diseases of children are among the very largest. Dr. Chapin's remarks are quite true. The students in those schools are under but slight supervision or control, and in many instances reflect no credit upon the instruction given. The schools themselves are partially responsible for this state of affairs. No supervision whatever is exercised over the students after they have registered and paid their fees. While compulsory attendance could not be enforced, measures could be taken to secure better attendance and to avoid the discredit which is sometimes cast upon the schools.

As to didactic teaching, it seems to me that it has an important place in the medical curriculum, although it has been fashionable of late years to deny it. It is difficult for the student and young practitioner to recognize the difference between the essentials and non-essentials, and it is this very thing that judicious didactic teaching can best bring out. The knowledge of the student runs along an unbroken level, so to speak. All facts are to him of about equal importance. The important facts are minimized, while unimportant facts are magnified. It is the province of didactic teaching to bring out clearly the salient facts of each subject—to set landmarks, so to speak, by which the young practitioner shall find his way among the great mass of confused and less important details.

This requires but little time as compared with the time required to acquire the mass of detail. It is just this work, I believe, that so excellent a teacher as Dr. Rotch attempts to perform in the comparatively few hours devoted to didactic teaching, and the reason that he includes all his subjects in his didactic lectures.

There is a great deal of so-called clinical teaching that is not clinical at all. Many *clinical* lectures in pediatrics are held by bringing a baby before the class in its mother's arms; the teacher asks a few questions regarding the illness of the child and deliberately turns his back and delivers what he calls a clinical lecture. The mere presence of a patient in the room does not change the character of the lecture from a didactic to a clinical one. The

chief criticisms to be passed upon the post-graduate teaching of pediatrics are, I believe, lack of a system on the part of the teacher, and the necessity under which he labors of catering more or less to the wishes of the students. To hold his class well in hand, the teacher is frequently obliged to adopt a course which in his own better judgment is not the best for the students.

DR. GRIFFITH.—A few years ago I had an extensive correspondence with many teachers of pediatrics throughout the country in an effort to find out what was being done in the different schools. Last year I again attempted to acquaint myself as far as possible through catalogues and through information obtained in other ways. I have statistics of the teaching of pediatrics in over 160 schools. This fact is very striking, that in nearly all the younger schools things are on a much better basis. Pediatrics appear to hold a position as good as that of any other department. I feel proud of my *alma mater*, for it is the oldest medical school in the United States; but perhaps for that reason it is one of the hardest to move. But that time will force a change I am sure. As to elective studies, I believe thoroughly that pediatrics should not be elective. The good men will study anyhow, but the bad will not study any subject unless they are made to; and they should be compelled to learn diseases of children.

Cerebro-Spinal Fever.—In a lecture on the above, Osler (*Mary. Med. Jour.*), draws attention to two points of very great moment in the diagnosis of the disease: Quincke's lumbar puncture, which enables one to make a comparatively early diagnosis, and the determination of the diplococcus intracellularis as the probable cause of the disease. The spinal puncture as recommended by Quincke is a perfectly harmless procedure, though it sometimes requires a little skill to get into the canal. Not only does it do no harm, but in some cases it seems to be beneficial in relieving the pressure. If a dry tap be the result it does not mean that meningitis is not present, for the exudate in the meninges may be of such a buttery consistence that it cannot flow. The determination of the presence of the diplococcus in the fluid obtained by lumbar puncture makes the diagnosis positive. The prognosis in cerebro-spinal fever is by no means hopeless in a large proportion of cases, though that in other forms of meningitis, due to the bacillus of tuberculosis, or the streptococcus, or the pneumococcus, is very fatal.—*Medico-Surgical Bulletin.*

PULMONARY HEMORRHAGE FOLLOWING EXPLORATORY PUNCTURE OF THE CHEST FOR FLUID IN INFANTS AND CHILDREN.*

BY HENRY KOPLIK, M.D.,

Attending Physician, Good Samaritan Dispensary; Adjunct Attending Physician, Mount Sinai Hospital (Children's), New York.

A most startling accident, both to physician and patient, is hemorrhage from the mouth or nose following the introduction of the exploratory needle into chest in the search for fluid or pus. In an article in the *American Text-Book of Diseases of Children* and also in my earlier writings upon pleurisy and empyema in infants and children I advocated the use of the exploring needle attached to the hypodermic syringe as a means of fixing the diagnosis or the character of the fluid which may be in the chest. I have in my writings in common with others dwelt upon the harmlessness of this procedure. At that time my experience was quite large in puncture of the chest, but as it has grown I have met cases in which the above peculiar accident has occurred. It will be of great use to others if my experience is recorded in order that the character and consequences of this accident may be known to those who have had no such experience. For should such an accident occur to the general practitioner, not knowing its course he would be apt to suffer from this lack of knowledge.

The introduction of the exploring needle should not be regarded as entirely harmless. It should be undertaken with a distinct reason. In other words, a physician should confront his patients with a knowledge of chest signs, the result of experience which will protect the patient from the superfluous use of the needle. The needle should rarely be introduced into the chest unless the physical signs warrant its use. I do not agree with those who insist that in cases in which a child has had a pneumonia and the temperature refuses to subside, the needle should be used to clear up the case.

I will illustrate with a concrete case. A child four years old, ill two weeks; illness began with a pneumonia and continued so for two weeks, with a high febrile movement and delirium. At the end of the two weeks, when called in consultation, I found a pneumonia in the upper lobe of the right lung;

*Read by title before the American Pediatric Society, Deer Park, June 28, 1899.

there was dulness, bronchophony and a few crepitant râles over this area; below there was slight dulness as far as the base, but the dulness was distinctly relieved by a pulmonary note. Air could be detected by percussion, there was fremitus down the right side as the patient cried; without going further into this case, I found that the chest had been punctured repeatedly for fluid which was not found. Why the fluid was sought was answered only by the fact that temperature was 104° at the end of two weeks' illness. This case recovered without any signs of fluid for which the patient had been punctured, to my mind, unjustifiably.

Another case is the following. I was called in consultation to see a child, female, six years of age. She had had a broncho-pneumonia of which the remains could be distinctly made out by a patch of dulness, slight bronchophony and a few râles (crepitant) pleuritic, on the left side running from the spine of the scapula to near the angle of the bone. The temperature persisted in the evening as high as 104° and dropped to the normal in the morning. It was another case in which the diagnosis and cause of temperature should have been sought elsewhere than in the chest. The physician in charge thought there might be an empyema localized. I pointed out the fact that this was scarcely possible because the dulness over the area was distinctly tympanitic. There was a pulmonary percussion note below and around to the axilla, and yet the physician in charge insisted on the introduction of the exploring needle. On a second visit this was done twice with results which I shall record below, no fluid being found.

I will cite another case. Infant nine months old in the fifth week of a wandering grippal pneumonia, pulmonary resonance simply interrupted on the left side by a spot about an inch in diameter at the centre of the chest behind. Fremitus very good, few crepitant râles, yet in the fifth week of the disease the physician advised introduction of a needle to see if the presence of fluid or pus would account for persistent temperature. This was not done and in a few days the temperature dropped to the normal and the infant recovered. It is not intended that the infants would have been injured by the needle in the above cases, but they simply illustrate the indefinite grounds on which its use in certain cases is advised.

Take another case seen in consultation. Child two and one-

half years of age; sick eleven weeks; had been operated upon in the third week of its illness for empyema. A portion of a rib on the right side had been resected and about a pint of pus evacuated. In spite of this the child did not do well; it had temperatures. The original wound closed. Several physicians called in consultation punctured this side of the chest in spite of the fact that no signs of fluid existed. There were many punctures made, and of course nothing found. In this case the temperature also determined the indication for puncture. The cause of the temperature here also lay outside the chest punctured. It is needless to say from what has been recorded above that the writer does not regard the existence of a temperature alone as a sign of the presence of fluid or pus, or a ground for the puncture of the chest wall with a needle. Hemorrhage either from the mouth, or mouth and nose, has occurred to me about in four cases immediately upon puncture of the chest, and, strange to say, in all cases there was no fluid withdrawn from the chest.

They were cases in which the presence of fluid was doubted from the beginning. In these cases it must have been that the lung was adherent through the pleura with the costal structure, and the needle entered directly into the lung and there caused a wound of some blood vessel which allowed the escape of blood as soon as the needle was withdrawn from the chest. The patients in all of these cases exhibited signs of great unrest, the blood came to the lips and nose in a spurt and was mingled with frothy sputum. In some of the cases the blood came from the nose only and but very little was seen on the tongue. Immediately preceding the above hemorrhage, there was a fit of coughing which continued after the hemorrhage had taken place. In none of the cases was there any collapse or syncope. The presence of blood, however, in all cases, alarmed me greatly and also the parents. I must conclude from my experience thus far that the hemorrhage is similar to that seen in the experimental laboratory. When the lung of a small animal is accidentally punctured and a hemorrhage results from the mouth and nose, the animal dies from a species of suffocation. The lungs are small and the blood fills the bronchii and the animal dies of asphyxia. Autopsy on such animals made by me revealed but very little to account for death and it could only be explained by the fact that the amount of blood was too great for the size of the animal's lung and, there-

fore, asphyxia was a mechanical process. In larger animals the result of simple puncture of a pulmonary vessel and hemorrhage is not always fatal as it is in the smaller animal. In children, on the other hand, the puncture of a vessel about the same size as in the animal is insufficient to overwhelm the air passages with hemorrhage and the child if promptly quieted reacts and there is no ill-effect. The expulsive cough and natural stoppage of the hemorrhage is the safeguard in these cases. On the other hand, it has occurred to my mind that a case might arise in which the above favorable circumstances would not obtain, such as puncture of a large blood vessel or a peculiar state of the blood not favorable to coagulation (hæmophilia), in which cases the hemorrhage continuing the child would inevitably die. This is not among the impossible occurrences, if we recall some of the septic cases we deal with, and it is the object of this paper to call attention to the above possibility of a fatal hemorrhage following exploratory puncture of the chest.

It is not intended in this paper to take up the methods of the puncture, but there are some very objectionable points in technique, matters of daily practice which should be avoided in exploratory punctures of the chest in infants and children.

It is my practice rarely to puncture more than once at a sitting. I make certain of the exact place in the chest where I think fluid is apt to be found. The needle is introduced at this point only. Two punctures at a sitting are very rarely called for and it must be some special circumstance which indicates its expediency. The repeated puncture of the chest at one sitting is, I think, uncalled for and shows great uncertainty in methods of examination and physical signs. It is in my mind also unnecessary, for rarely do we find a case of such urgency that a second puncture cannot be postponed. Again I feel that repeated puncture of the chest at the same sitting is fraught with danger on account of the continued struggles of the patient, though held ever so firmly. The needle should be entered at point of greatest flatness or dulness. The puncture should be made with a needle not too large in calibre. There is, it seems to me, a touch of indifference to suffering in using too large a needle in infants and children, and there must be extraordinary conditions which demand a needle larger than a millimetre in calibre. The needle should not be entered too deeply in the chest wall, at most two centimetres. It should not be entered

and then withdrawn and pointed up and down and in various directions in quest of pus, for in this way the struggle of the patient, even if firmly held, causes puncture of the lung and blood vessels. The needle should be withdrawn as rapidly as it is entered and the whole operation should be completed in less than half a minute. I have heard of prolonged puncture (five minutes). This is of very questionable utility.

Puncture should be made cautiously on the left side. Either behind or in front, in vicinity of the heart and great vessels, also behind on both sides close to the spinal vertebræ. I have never punctured in front over the apex of the lung and great vessels.

It has been far from my intention to enter in details of physical signs which in a concrete case would justify the use of the needle. This rather belongs to the very familiar field of the text-book and can only be appreciated by actual study of a case.

66 EAST FIFTY-EIGHTH STREET.

Alcoholism in Children.—Combe, of Lausanne, discusses (*Annal de Medicin et Chirurg. Infant.*) in an exhaustive manner the ways in which infants often become poisoned with alcohol and the effects. He points out that, on account of the greatly developed nervous system of children, the effects of alcohol are much more marked in them than in adults; and claims that poisoning by this drug is much more frequent in nurslings than is supposed. The most usual cause is the secretion of alcohol with the milk of intemperate wet nurses. A second cause is the practice of cleansing nursing bottles with alcoholic solutions before putting them into the mouths of infants. Combe describes two forms of alcoholism in nursing children: the acute and the chronic. The acute form arises from access to their systems of relatively larger amounts of alcohol whether mixed with their milk or with water. This is characterized by convulsions. Striking cases of it are reported by the author. In the chronic form the babies are excitable, poor sleepers, cry much and fail to take on flesh as they should. Both forms yield quickly when the nurse is changed or the alcoholization is stopped.—*International Medical Journal.*

A CASE OF TRANSPOSITION OF THE VISCERA, AND OF THE GREAT VESSELS, WITH PULMONARY STENOSIS AND PERFORATE SEPTUM VENTRICULORUM.*

BY J. P. CROZER GRIFFITH, M.D.,
Clinical Professor of Diseases of Children in the University of Pennsylvania.

The following interesting case of transposition of the viscera, with anomaly of the heart came under my observation recently. I desire to report it to the Society, and to exhibit the heart and lungs, and the photographs of the cadaver. The clinical history is as follows:

Wm. B., eight months old, was admitted to the Children's Hospital December 30th. He weighed nine pounds at birth. There is no history of cyanosis exhibited at that time. Three months previously he began to have attacks of cyanosis and dyspnœa, lasting about twenty minutes, and occurring about half a dozen times a day. In these attacks he became blue in the hands, feet, and face, and had rapid breathing, with crying. During the attack he would not take nourishment. Since the beginning of this condition he has always been somewhat blue. He has lost much in weight.

On admission the child seemed ill and was distinctly cyanotic. The notes of the examination made on January 2d read as follows: The child lies apparently comfortably on its back. The face has a decidedly bluish cast, and the body also to some extent. A systolic murmur is heard with greatest intensity at the pulmonary cartilage and at the third left interspace close to the sternum. A murmur is also heard distinctly over the mid-sternum, and faintly at the aortic cartilage and the apex. It is not transmitted into the axilla. There is no thrill. The cardiac dulness is bounded above by the third rib, and on the right side by the left edge of the sternum. The apex-beat is in the fourth interspace within the nipple line.

The diagnosis was made of pulmonary stenosis, probably associated with perforate septum ventriculorum. Further examination was deferred. The child soon sickened with what appeared to be symptoms of pneumonia. His cyanosis increased and he was so weak that he was treated purely symptomatically and the actual condition of the viscera not investigated by physi-

* Read before the American Pediatric Society, Deer Park, June 28, 1899.

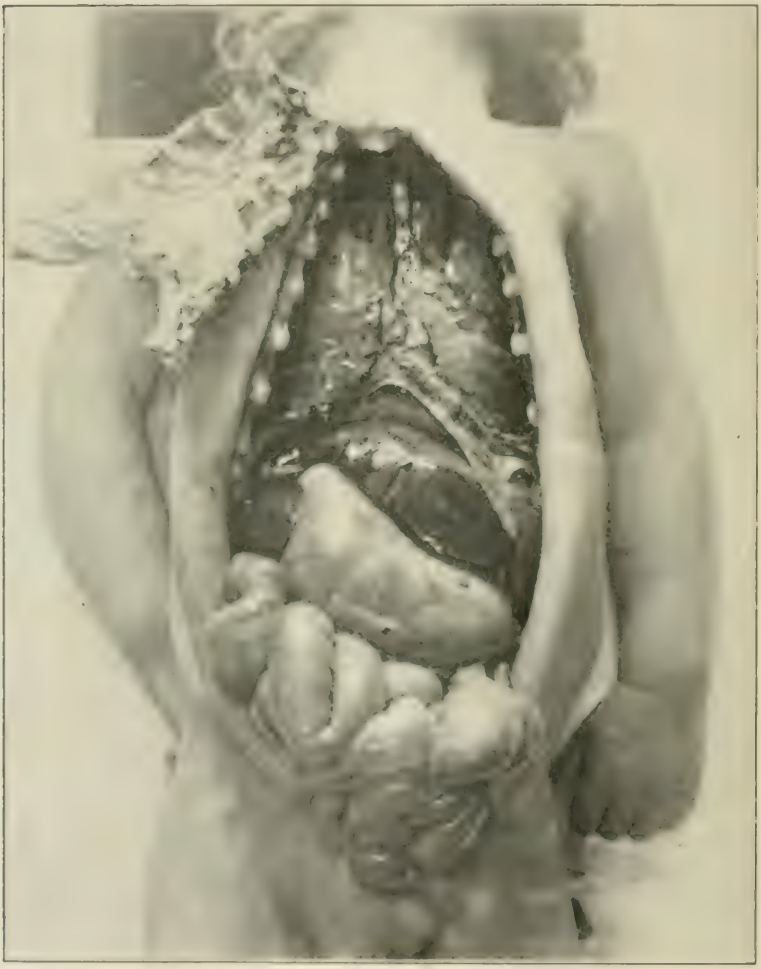
cal examination. This plan of letting alone, while doubtless beneficial to the patient, is the source of regret to us now, as the existence of the transposition of the viscera shown at the autopsy was consequently not discovered *intra vitam.*

The following notes of the *post-mortem* appearances are derived partly from abstracts from the records of the autopsy made by Dr. Alfred Hand, Jr., pathologist to the hospital, partly from personal study of the heart after its removal:

The left lung has three distinct lobes; the right lung two distinct lobes. The heart is evidently hypertrophied. It occupies the normal position in the chest, with its axis running obliquely downwards from right to left. The left ventricle lies chiefly posteriorly, as in the normal heart; its walls are much thickened; the auriculo-ventricular valve has two leaflets. The right ventricle lies more anteriorly, as usual; its walls are somewhat hypertrophied; the auriculo-ventricular valve of this side has three leaflets. The inter-ventricular septum is deficient in its entire upper portion. The foramen ovale is patulous. The aorta arises from the right ventricle, lying to the right of, and, at its origin, somewhat anteriorly to the pulmonary artery. It passes upwards and arches slightly from right to left, but then passes almost directly backwards, arching over the right bronchus and descending in the thorax upon the right half of the vertebral column. In its course it gives off a right subclavian, a right common carotid, and then the innominate, which divides into the left carotid and the left subclavian. The coronary arteries arise from the right ventricle. The pulmonary artery arises from the left ventricle, to the left of, and slightly posterior to the origin of the aorta. It is much narrowed both at the orifice and in its trunk. The valves are small, poorly developed and thicker than normal. The pulmonary artery gives off the ductus arteriosus, a small trunk which is patulous to a large probe up to, but not into, the aorta.

The relative positions of the pulmonary artery and the ascending portion of the arch of the aorta are, therefore, practically identical with those of the normal relation, save only that there is absent the normal crossing of the beginning of the aorta behind the pulmonary artery from left to right.

The pulmonary veins enter the right auricle. The inferior vena cava ascends through the diaphragm to the left of the median line, and empties into the left auricle. The superior vena



DR. GRIFFITH'S CASE OF TRANSPOSITION OF THE VISCERA AND GREAT VESSELS.

cava likewise empties into this auricle. The liver lies chiefly to the left side, its larger lobe being in the left hypochondrium. The spleen lies in the mid-axillary line in the right hypochondrium. There are two supernumerary spleens. The œsophagus descends upon the right side and opens into the cardia of the stomach, which is to the right of the median line. The pylorus lies to the left. The cæcum lies in the left iliac region. The course of the colon is from left to right. The left renal artery and right renal vein are respectively longer than the corresponding artery and vein.

I show the heart and lungs, which exhibit the peculiarities I have described. The accompanying photograph shows the thorax and abdomen opened, and the viscera in their transposed positions.

The variations which congenital cardiac lesions may exhibit, and the variety of combinations which transposition of the viscera, including and excluding that of the heart chambers, may give rise to, is too great to admit of a discussion of them in connection with this mere report of a case. I may say only that this case appears to be one of transposition of the viscera including the great vessels, but not including the chambers of the heart. There was, namely, no dextro-cardia present. The diagnosis of the perforate septum and the pulmonary stenosis was made during life; that of the transposition was not.

This is, I believe, the fifth case of transposition of the viscera which I have been fortunate enough to meet with.

123 SOUTH EIGHTEENTH STREET.

DISCUSSION.

DR. CHAPIN.—I presented a case to the Academy of Medicine in New York some years ago, but my patient was in perfect health, and the transposition of the viscera was only accidentally discovered. The heart was on the right side and the liver on the left.

DR. KOPLIK.—I showed a case similar to that of Dr. Chapin at the Academy. The boy was in good health, but at times had attacks of asthma. There was a murmur over the pulmonary area, but strictly confined, and there was a question as to whether there was a deficiency of the auriculo-ventricular septum or a stenosis of the aorta.

THE PRESIDENT.—Some years ago I discovered a case of symmetrical transposition of all the viscera in an adult female. That was before I had begun to perform autopsies. Since I entered upon that work, I have made 2.000 autopsies without discovering a transposition of the viscera in an infant.

DR. GRIFFITH.—The first case I saw was when I was a hospital resident, and, not knowing how rare such things were, I did not preserve any specimens. One of the cases I saw was that of a nurse in one of the Vienna hospitals, and it was a favorite plan of the professor to wrap her head so as to disguise her, and then have the American physicians examine her. The curious diagnoses turned in were very amusing. I saw a case last year with Dr. Babcock, of Chicago, where there was undoubtedly transposition with a congenital heart lesion.

THE PRESIDENT.—We have seen quite a number of these cases of stenosis of the pulmonary artery with deficient septum ventriculorum, and yet no transposition.

New Method of Extracting Foreign Bodies from the Nasal Fossæ in Children.—M. Felizet (*Journal des Practiciens*) related to the Surgical Society a method of extracting foreign bodies from the nose in children, which he has used with satisfactory results for five years. He injects through the sound nostril a current of warm salt water at a moderate pressure which, returning by the posterior nares of the occluded nostril, forces the foreign body out, or at least allows of its being seized with forceps.—*New York Medical Journal.*

Infant Feeding.—Haan (*La Normandie Med.*) in concluding an article on the avoidance of cutaneous and intestinal accidents by proper alimentation, gives the usual advice favoring maternal lactation, sterilization, and sanitary supervision of milk supply, warns against the rubber-tube nursing-bottle, "which costs thousands of lives annually in France," and then adds counsel of a more original character, such as the distribution of printed cards to each household, with sanitary directions, one of these being to interdict the giving of purgatives to infants in the summer, because even the initial stage of a diarrhœa can give the bacillus coli an opportunity to exert its pathogenetic action as determining cause of a gastro-enteritis which is both transmissible and deadly.—*Medical Review of Reviews.*

A PRELIMINARY COMMUNICATION ON THE SEPARATION OF BACTERIA FROM MILK BY NATURAL PROCESS.*

BY ROWLAND GODFREY FREEMAN, M.D.,
Attending Physician to the New York Foundling Hospital.

At the last meeting of this Society I presented a collective investigation of the opinions of the members of this Society concerning the heating of milk for sterilization before feeding. The reports received by me made it evident that the majority of the members were inclined to use raw milk when the conditions at the dairy supplying the milk were satisfactory.

I, on the contrary, expressed the opinion that even such milk could not be considered safe, because it was likely to contain a considerable number of bacteria, and we could not make sure that among them there might not be the bacteria causing diarrhœa, typhoid fever, diphtheria, or the germs of measles or scarlet fever. On this account I wish to make a preliminary communication to you on work which is quite incomplete, but which has made it evident to me that the great bulk of bacteria which contaminates milk may separate by natural process from it, without the use of filtration, or heat, or the addition of any preservative. So far as I know this phenomenon has not been previously described.

For obvious reasons the bacterial examination of milk has always been made after a thorough mixing of the milk and cream, so as to obtain a sample of the entire product, and owing to this technical procedure a very interesting and apparently important natural phenomenon has been overlooked.

If milk is allowed to stand and the cream rises, and then a separate analysis is made of the milk and cream, it is found, in the average of a considerable number of analyses which I have so far made, that the cream contains some 300 times as many bacteria as the milk, and with the rising of the cream about 90 per cent. of the bacteria are removed from the milk.

This matter requires much more experiment to corroborate these figures, which are obtained from comparatively few observations.

This separation of the bacteria might seem to be due to the

* Read before the American Pediatric Society, Deer Park, June 27, 1899.

better growth of bacteria in the top layer from the better nutriment furnished by the cream and the greater supply of oxygen; or, on the other hand, it may be due to the carrying up of bacteria by the fat globules as they rise.

An analogous phenomenon to this then would be the purification of water by alum. This precipitate produced by the introduction of alum into water, in settling carries with it the bacteria and thus renders the water practically sterile. Assuming that the fat globules act in a similar manner, this phenomenon in milk might be called inverse precipitation.

This inverse precipitation may take place repeatedly in the same sample of milk, that is, one may allow the cream to separate from a sample of milk; after remixing the milk and allowing it to stand, this separation of the bacteria into the upper layers is again observed.

The extent to which bacteria are removed from the milk by this action may be better appreciated from the following experiments:

One sample of milk that contained 4,240 bacteria per c.c. showed in the milk after separation of the cream, 36 per c.c. Another containing 7,750 showed after separation of the cream only 20. Another containing 18,970 showed after separation 175.

The practical bearing of the observation is obviously very important.

If heating milk to 68° C. or 155° F. is injurious to the milk as an infant food, the bulk of the bacteria present may be separated by natural processes from the milk by allowing the cream to rise and the cream may then be pasteurized or sterilized and afterward mixed again with the comparatively germ free raw milk. This I believe to be true of good milk with few bacteria.

I must apologize for presenting to the society so incomplete an observation, but it seems to me that on account of its practical bearings it might be well to present it even in this form now.

205 WEST FIFTY-SEVENTH STREET.

DISCUSSION.

DR. COTTON.—Were any obervations made in regard to the separated milk or the cream obtained by the centrifuge?

DR. FREEMAN.—I have made a great many examinations of this kind. The skimmed milk and the cream both contain a great many bacteria. It is my impression that the centrifuged

milk is not as free from bacteria as that separated by natural processes.

DR. ADAMS.—Was the milk in such a condition that bacteria could not fall on the cream? Was it protected from the air?

DR. FREEMAN.—Yes, it was fully protected.

DR. KOPLIK.—I would like to ask Dr. Freeman if he advocates the giving of raw milk to babies?

DR. FREEMAN.—I do not give any raw milk to babies.

DR. KOPLIK.—I think it would be unfortunate if that point were misunderstood, for it is not well for the Society to advise at present the giving of raw milk.

DR. FORCHHEIMER.—Our ideal food in the future is going to be raw milk. The ideal we ought to work for is to have milk produced in such a way that it can be given raw. It is, to my mind, the principal point in infant feeding. While at the present time we may not be prepared to give it raw, except as Dr. Freeman says, under extraordinary circumstances; I have some patients to whom I give it.

DR. GRAHAM.—I have been assured that milk can be procured in such a way as to make the entrance of bacteria into it almost an impossibility, and, I think, just as soon as we can reach that point, just so soon will pasteurization and sterilization pass from the practice of medicine.

DR. ROTCH.—I do not mean to say much against the giving of raw milk, except that you should be sure what the milk is. Some babies cannot take pasteurized or sterilized milk. They do not do well on it and by using the raw milk with the same modifications they will do well.

DR. ADAMS.—I agree with Dr. Forchheimer that the ideal milk is that which is free from bacteria, and three of us are now concerned in a milk farm where the bacteria have frequently been kept down as low as 50 colonies per c.c. Again it has varied and run as high as 250,000. An investigation on that occasion showed that they had washed the cow-shed and, of course, stirred up the dust just before the milking.

Spontaneous Gangrene in Childhood.—Zuppinger (*Wiener Klinische Wochenschrift*) gives a description of a case of severe spontaneous multiple gangrene on the back and lower limbs of a hitherto healthy child after croupous pneumonia, which commenced a few weeks after convalescence from measles. He reviews the literature on the subject and emphasizes the importance of stimulating the heart's action in case of feeble circulation, without waiting for serious symptoms of vascular obstruction. —*Journal of the American Medical Association.*

A CASE OF CONGENITAL DIAPHRAGMATIC HERNIA.

BY SAMUEL W. KELLEY, M.D.,

Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons; Pediatrist to the General Hospital, etc., etc., Cleveland, O.

On June 14, 1893, I was called to attend Mrs. R. in labor. She was the mother of five healthy children and her labors had always been natural and brief. This time labor was tedious in the first stage, from inertia, but fifteen grains of quinine stimulated the uterus sufficiently to render the second stage vigorous and short; and I expected nothing wrong with the child.

As soon as the child was born it cried feebly but distinctly twice. Failing in my instant efforts to secure strong respiration and a lusty cry, I tied the cord and tried artificial respiration by all the usual means.

The child gasped at intervals which, short at first, became lengthened, and in spite of all my efforts it grew steadily worse and died in about twenty minutes.

I had observed in the first moments of its life as I placed my hand upon the chest that the heart's impulse was upon the right side, and as I watched the ineffectual efforts at breathing, I drew the attention of the nurse and of the child's father to the position of the heart beat, and stated my belief that there was a serious transposition or malformation in the chest. An autopsy was permitted, provided it was done in a specified time.

It was made on June 15th with the assistance of Dr. C. W. McElhaney and Mr. E. S. McIntosh (medical student), the father also being present. The accompanying diagrams and notes were made upon the spot and give an accurate if not detailed account of the case. It appears a well-formed girl baby, weight estimated at seven pounds. Fig. I. shows the appearance on opening the thorax and abdomen. Further examination disclosed conditions as follows:

The œsophagus, which was covered in by the small intestines, came round from behind the trachea in the root of the neck and descending in front of the trachea made an abrupt bend forward to enter the stomach, without passing through the diaphragm. The stomach was inverted and its ends reversed, its greater curvature being uppermost and to the right, and the pylorus

being to the left in about the region of the left nipple. The cardiac end was a little to the right of the lower end of the sternum. The stomach lay above a portion of liver which in turn was above the position of the diaphragm.

From the pylorus the small intestine extended upward in coils occupying the upper portion of the thorax, and lying mostly to the right side. Its mesentery was attached along the dorsal spine.

The vermiform appendix was in a position which I think would have puzzled the most sanguine surgeon to locate during life. It was uncovered by turning the stomach downward. The appendix was three inches long. The ileum entered it midway of its length. The cæcum was the usual dilated pouch at the upper end of the appendix, but just beyond the cæcum the colon was constricted to less than half its proper calibre for a distance of two inches. From that on to the anus it was of usual size.

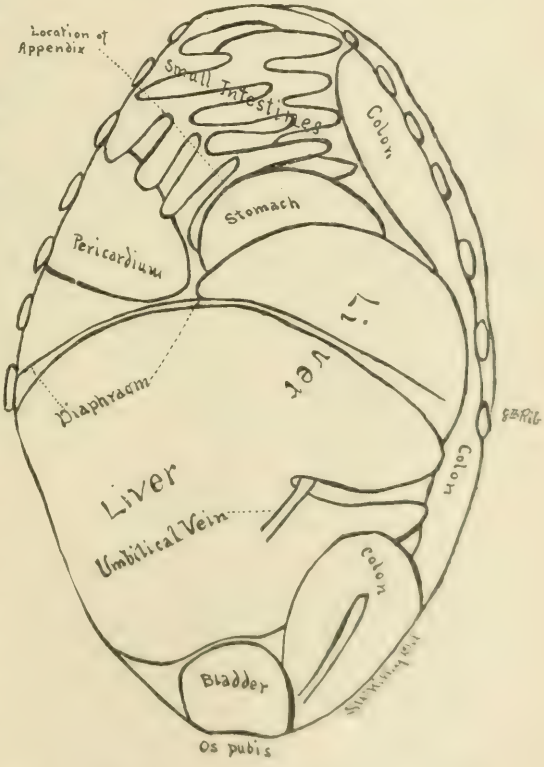


Fig. 1. SHOWING APPEARANCE ON OPENING THE BODY. ONE HALF NATURAL SIZE.

The colon was in a loop in the left side of the thorax, thence descended along the left side of the body, formed a coil in the left hypogastric region and entered the rectum, which was normally located.

In descending from thorax to abdomen along the left side the colon was not obstructed by the diaphragm, as a large portion

of that muscle upon the left side and posteriorly was absent. The diaphragm upon the right side occupied its usual position, and was well developed; but from the vertebral column toward the left side it consisted only of a triangular process which tapered to a point at about the eighth costo-sternal cartilage.

The posterior edge of this rudimentary leaflet of the diaphragm was smooth and muscular and fitted into a deep fissure in the liver. The opening in the diaphragm was therefore occupied by the portion of liver connecting the upper to the lower lobe of that organ and by the colon.

The liver, much larger than is ordinary even in the newborn, was of a shape to defy my descriptive powers. The small lobe mentioned was in the thorax, while the large lobe filled the space from the diaphragm to the bladder, excepting the space for the descending portion and sigmoid loop of the colon. A fissure marked the middle of the large abdominal lobe of the liver, beginning at its left margin and extending a third of the distance across it. At the deepest angle of this fissure, which was considerably to the left of the median line of the body, the umbilical vein entered the liver.

The gall bladder was upon the posterior surface between this fissure and the pyloric end of the stomach.

The urinary bladder was normal and contained urine, and the colon was filled with meconium.

The uterus and its appendages and the kidneys and ureters were normal.

The pancreas was a shapeless mass closely tied up by the mesentery and lying in the lesser curvature of the stomach.

The spleen was of normal size and color and located about the usual position.

The heart and great vessels were developed normally as to size and connections, but were placed as though the heart had been carried from its normal location across to the right, twisting the position of the vessels. The heart was lying below and to the right of the right nipple with the left ventricle anteriorly and the apex pointing toward the middle line forward and downward. When the thorax was opened no lungs whatever were in sight.

On exploring behind the small intestines and heart in the extreme right and posterior portion of the thorax, a body was found resembling lung tissue. This with the thymus gland,

pericardium, heart and great vessels were removed *en masse* for closer inspection. They are represented in Fig. II., the lungs having been filled with air artificially. 1, 1, is the thymus gland. 2, 2, 2, is the right lung with three lobes. 3 is the pericardium with its contents. Fig. III., shows the base of the right lung inflated.

The trachea bifurcated just posterior to the arch of the aorta, the "left" bronchus being anterior to the right. Attached to the diminutive left bronchus was the left lung, its broadest surface, two lobes, of size and shape, as shown in Fig. IV. It was about an eighth of an inch in thickness and was located behind the heart with the pointed end forward, and in relation with the small intestines on its left aspect.

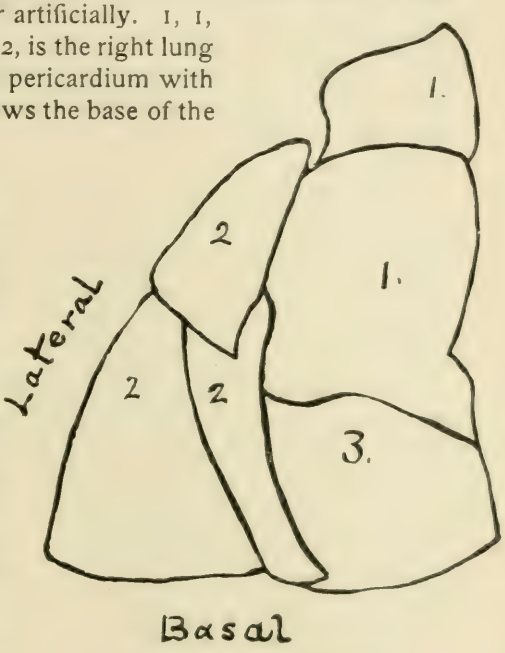


Fig. II. RIGHT LUNG INFLATED, THYMUS GLAND AND PERICARDIUM.

It is interesting to trace a little way the causation of such a malformation or complication of malformations. It will be remembered that early in the development of the fœtus there is a time when there is no thorax; when there is but one cavity in the body of what is to be the fœtus, and that is the abdominal cavity. The internal layer of the blastoderm closes up to form a gastro-intestinal canal. It assumes a tubular shape and then the upper end of the tube expands to form the stomach, which lies in the upper portion of the body near the pharynx, while the other end reaches down to-

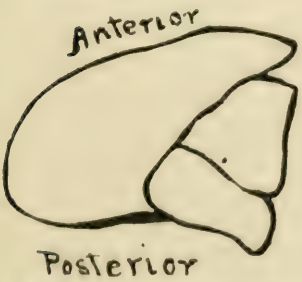


Fig. III. BASAL SURFACE OF RIGHT LUNG. INFLATED.



Fig. IV. LEFT LUNG. INFLATED.

ward the tail; for even the human creature at this stage has a tail.

Then the liver buds out from the intestinal canal and develops early and rapidly, so that it has attained a large growth by the end of the first month, weighing one-quarter as much as the whole embryon and filling the most of the abdominal cavity. At this time there is no connection between the stomach and the pharynx.

The œsophagus then begins to appear as a short tube which bye and bye opens through into the stomach below, and the pharynx above. The lungs bud out from the sides of the œsophagus, which later partitions off a portion of its tube for the trachea.

Still there is no division of the cavity of the body. The stomach lies close beneath the pharynx, connected by the short œsophagus which has the budding lungs at each side of it and the heart just in front of the lungs. Now, the thorax should develop, the lungs grow and the œsophagus lengthen, while the diaphragm starting from its periphery should close in toward the centre, separating the abdomen and its organs from the thorax and its organs; only leaving opening enough for the passage of the œsophagus and the vessels.

But in this case the great liver seems to have pre-empted a wide domain, while the gastro-intestinal tube had a squatter's right in the thorax, and the diaphragm was not able to put them out. Consequently there was not room for the development of the lungs, particularly of the left lung. Even if there had been lungs enough to sustain life, it is doubtful if the intestines could have functionated satisfactorily for any length of time.

As to the peculiar malformation at the appendix and cæcum I have never seen its like nor a report of a similar case elsewhere.

Evidently this may be classed as a congenital phrenic or diaphragmatic hernia. I shall trouble you with no extended review of the literature of the subject. The authors are agreed that diaphragmatic hernia is quite rare. As to whether the congenital form, from failure of development of the diaphragm, or the acquired variety from wound or laceration of that muscle, is the more frequent, there seems to be some difference of opinion. Of course hernia may also occur through any of the natural but dilated openings in a diaphragm, and Holmes mentions another variety "in which the diaphragm becomes

stretched in consequence of a want of tone" and some of the abdominal viscera press upward into the thorax.

Congenital diaphragmatic hernia of slighter severity than shown in this case may occur. Cases have been recorded as growing into childhood, youth and even to adult life, and dying from other causes without ever a symptom giving rise to suspicion of congenital phrenic hernia.

Still other cases have symptoms, such as dyspnœa, limited respiratory movements, tympanitic resonance if there is bowel or stomach in the thorax, displacement of apex beat if the hernia is upon the left side, as is usually the case. There may be also symptoms of intestinal obstruction.

No treatment is indicated unless symptoms of obstruction supervene when laparotomy or thoracotomy would be justified, although operation would probably avail nothing.

There is usually in every audience some one who is not satisfied with that saying of Goethe's, "*Es ist immer gut etwas zu wissen,*" but who wants to inquire what is the practical good of knowing anything about this kind of a case.

In deference to such allow me to point out that although the doctor cannot prevent malformations of this kind and cannot remedy them by remembering the possibility of their occurrence, he will be able to account for the condition of the patient and save himself from censure. When one considers the frequency of visible malformations appearing in the new-born he is led to suspect that there are many more invisible among the complicated and delicate internal organs, causing still-birth or sudden death in the new-born, which results are perhaps attributed to bad management on the part of the obstetrician. I believe that we all should search more critically than is usually done into these cases of still-birth and of death soon after birth.

1150 SUPERIOR STREET.

Clinical Memoranda.

ACUTE TONSILLITIS IN AN INFANT OF FIVE MONTHS: A SECOND ATTACK, ELEVEN MONTHS LATER.

BY T. G. BROWNSON, M.D.,

Chicago, Ill.

While cases of tonsillitis have been reported as occurring in early infancy, it is sufficiently rare to warrant the reporting of the following case: The infant was a little more than five months old. It was breast-fed and had been previously well. On March 14, 1898, it suddenly became feverish and refused to nurse. I was summoned and found the child hot and flushed. It cried frequently and the voice seemed a little husky. There were no other symptoms. There was no cough nor vomiting, nor any signs of indigestion. The child made attempts at nursing, but would immediately stop, as if swallowing caused pain. Examination revealed no disease in the chest or digestive organs. Examination of the throat showed typical signs of tonsillitis, namely: tonsils red and swollen, and on each several round white spots. The child seemed very sick and on the next day was more so. The attack ran the ordinary course and subsided.

The child rapidly became pale during the attack and was left very anæmic. Its color had not been particularly good before. It was fretful and did not nurse as well as usual. After several days, as the color did not improve, I prescribed syrup of iodide of iron, but the child vomited it. I then prescribed pepto-mangan in five-drop doses, four times a day. This the child took without trouble and soon seemed to feel better. The color begun to improve and after three weeks the child was in better condition than before the sickness.

The child continued to be quite well until February 6, 1899, when it was again seized with the same symptoms and passed through another attack of tonsillitis. This attack was also followed by anæmia, and the same treatment was given, under which the color and general health soon improved. While cases equally young have been reported, two attacks of tonsillitis in a child so young are certainly rare.

THE
ARCHIVES OF PEDIATRICS.
DEVOTED TO THE
DISEASES OF INFANTS AND CHILDREN.
AUGUST, 1899.

Edited by FLOYD M. CRANDALL, M.D.,
Adjunct Professor of Pediatrics, New York Polyclinic; Visiting Physician, Hospital for Scarlet Fever and Diphtheria; Consulting Physician, Children's and Infants' Hospitals.

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THE TREATMENT OF CHOREA.

The mildest case of chorea should receive prompt treatment, not of necessity, however, by drugs. Rest is the most important factor in the treatment of the disease. The child, no matter how slight the movements may be, should be taken from school at once. He should be allowed to come in contact only with his own brothers and sisters, and with them only for limited periods during the day. He should be removed from all excitement, and all references to his condition should be studiously avoided. Above all things, he should be removed from the possibility of ridicule or thoughtless reference to his misfortune. The parents should be particularly cautioned not to punish the child for any act resulting from weakness or from the choreic movements.

In mild forms of the disease, absolute rest in bed may not be advisable. But even in that condition, the child should be kept in bed each day longer than is his wont in health. In severe and increasing cases, absolute rest in bed should be insisted upon. As the disease improves, the child may be allowed to be up for two or three hours, the daily period being gradually lengthened. The diet must also be regulated very closely. Sachs is certainly very near the truth when he says, "milk and

rest will do more for most cases of chorea than any other two measures." This treatment is most effective in the early stages, a time at which medication is least effective. It is entirely true that the rest treatment may be overdone, and judgment must be used, lest by its over-continuance the monotony and lack of fresh air may counteract its benefits.

The question of exercise is one which demands sound judgment and must be decided largely upon the conditions present. When the disease is subsiding, exercise is certainly beneficial, but it should never be carried to the point of over-fatigue, and exciting games of every kind should be proscribed. Upon the question of returning to school and resuming piano practice and more active games, it is wise to err upon the side of over-caution.

The tendency of chorea to recur should not be forgotten. Children who have once suffered from it should be watched for premonitory symptoms, it being remembered that the disease is far more common in the spring than at any other time of year. They should not be overcrowded in school and should be particularly guarded against attacks of rheumatism.

The medicinal treatment of chorea is important, and, when judiciously employed, is of exceeding great value in controlling the disease, but the importance of combining with it the proper hygienic and dietetic management cannot be stated too positively.

THE MEDICINAL TREATMENT OF CHOREA.

Judicious medicinal treatment is of unquestioned value in chorea. Differences of opinion regarding such treatment, it must be said, are less marked than in most other diseases. One drug is almost universally acknowledged to be of value, namely, arsenic. Its value in non-rheumatic cases is unquestionable. While its effects are not so pronounced in cases of rheumatic origin, its value even in them is usually great.

The dose of arsenic is frequently so small that no beneficial results are obtained. Beginning at three drops of Fowler's so-

lution three times a day, it should be increased one or two drops a day until nausea or abdominal pain occurs or puffiness appears about the eyes. Treatment should then be stopped for twenty-four hours and then resumed, the dose being several drops below the highest previously given. The dose should again be gradually raised.

In many cases no improvement will be seen until slight constitutional effects are obtained. Unless distinct improvement is seen, the drug should be pushed to the point of tolerance. Twelve drops three times a day is usually the limit for a child of seven or eight years. Larger doses are frequently given, but they should be administered with the utmost caution. When these large doses have been reached, if no improvement is seen, other measures should be tried. Cases of multiple neuritis have been reported, resulting, it would seem, from excessive doses of arsenic. Its use in large doses demands the greatest caution and good judgment, and the patient while taking them should be kept under close observation.

Fowler's solution should never be given on an empty stomach. It should always be administered greatly diluted. It will thus produce very little gastric irritation. In prescribing the solution, it is wise to dilute it with one or two volumes of water, the dose being increased in equal proportion. Possible errors in measuring the dose thus become of less importance.

In rheumatic cases, particularly those in which acute rheumatism is present with the chorea, salicylate of soda is of great value. Under such conditions, it is usually more efficacious than arsenic. It should be given in full doses and the rheumatic symptoms should be brought under control as quickly as possible.

The use of antipyrin occasionally produces very brilliant results and as often fails entirely. In our own experience it has proved most effective in nervous girls in whom the rheumatic tendency was slight. In cases which apparently result more or less directly from overwork at school or from neurotic conditions, it often proves very effective.

When the sleep is broken, trional is an excellent and very effective drug. In cases of great severity, where the violence of the movements and the interference with sleep threaten to consume the strength of the patient, bromide and chloral or even codine or some other preparation of opium may be required, but such drugs should only be used in cases of extreme necessity.

Anæmia is such a constant accompaniment of chorea that it should always receive attention. Some preparation of iron is almost without exception indicated. The bitter wine of iron or syrup of the iodine of iron are particularly good preparations.

The natural history of chorea should not be forgotten in deciding upon the effects of treatment. After the third week the results of treatment are far more favorable than before that time, for the disease is then in its decreasing stage, or at least past the stage of increase. Failure to remember this fact accounts for many of the differences of opinion regarding the effect of drugs upon chorea.

THE FREQUENCY OF LEFT-HANDEDNESS.

Among other peculiar observations made by Dr. Hrdlicka in recent studies upon anthropology, were those made to ascertain the number of left-handed individuals among the children. There is no particular significance in the simple fact that a person is left-handed, or at least we know as yet positively of no such significance, and the investigations as to this point have up to now been largely only statistical.

Among the 1,000 inmates of the asylum where the investigation was made there were six left-handed boys and four left-handed girls. In some of these subjects the left-handedness probably was more apparent than real, as in two of the boys and three of the girls, notwithstanding the left-handedness, the right arm was found to be the stronger.

THE AMERICAN PEDIATRIC SOCIETY.

Although for a time the outlook seemed unfavorable, the last meeting of the Society proved to be unusually successful. The papers were above the average, and indicated a greater amount of labor and research than has always been the case. The discussions were particularly animated, and were, perhaps, the best in the history of the Society. They were a notable feature of the meeting.

Deer Park was an ideal place for meeting, and the courtesy of its managers was fully appreciated by the Society. Situated at an elevation of three thousand feet, the bracing atmosphere and cool nights, together with excellent hotel management, render it one of the most healthful and delightful of summer resorts. These features aided much in making the meeting one of decided success.

As usual, the Society was placed under a debt of obligation to its indefatigable Secretary, Samuel S. Adams, whose efforts in its behalf have been unceasing. How large a part of the pleasure derived from the yearly meetings is to be credited to his tireless energy and exhaustless patience every member well knows. Whether managing a railroad company, running a Pullman car, arranging a drive, or demonstrating the best method of managing college directors, he is inimitable.

We have before had occasion to call attention to the peculiar value of societies of this character. Such meetings, by stimulating men who see vast amounts of clinical material to record and report their observations, cannot fail to add much to the common stock of knowledge. This experience recorded by papers and sifted by discussion may thus become, to a certain extent, the experience of thousands of other professional workers, and does not die with the man whose experience it originally was. It would be an error to suppose that the good derived from such meetings is limited to the actual sessions of the Society. The constant interchange of opinions during several

days of close companionship proves often of as much practical value as the formal discussions.

Elevation of professional tone and the broadening of ideas are perhaps the most important results of such assemblages. The knowledge thus gained of what good professional and scientific work really is, and how it is done, necessarily acts as an inspiration to the performance of equally good work. We have no hesitation in saying that the American Pediatric Society has done more than any other agency in this country to inspire good work in pediatrics.

Dr. James Carmichael, of Edinburgh, calls our attention to an error in the June number, in an abstract of his article on "Rheumatism in Children," in describing as his treatment for rheumatism the treatment designed only for the cardiac complications. The treatment described would certainly be inappropriate in cases free from cardiac involvement.

The "Strumous" Diathesis.—Duckworth, in the Harveian Oration for 1898, advises the free surgical excision of disordered lymphatic glands in strumous individuals, even though in many cases neither tubercle bacilli nor caseous matter can be detected in them. They represent a good soil wherein tubercle bacilli may lodge, and induce caseation should they gain entry. This peculiarity of the lymph system in the strumous subject justifies the use of the term "strumous inflammation," independent of the modern idea of tuberculosis. A strumous habit of body has doubtless a marked influence in modifying other morbid conditions which may occur in earlier or later life. The specific reaction to simple irritants giving rise to strumous inflammation of lymphatic glands, which is common in youth, may remain in the adult, and extend into advanced life, and the consequences of infections as by scarlatina or syphilis, or the gouty irritation, may be, and probably are, greatly modified by this tendency, giving rise to varieties in the several manifestations of these diseases. Thus gout appears to have a tendency to linger in strumous subjects, and in its articular form to be attended here by greater effusion, while chronic tubal nephritis in such subjects is more than usually grave and resistant. The author concludes, in short, that the strumous diathesis is a bad one for the coincidence of the most morbid conditions.—*Medical News.*

Society Reports.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting of May 9, 1899.

EDWIN E. GRAHAM, M.D., PRESIDENT.

SARCOMA OF THE KIDNEY IN A CHILD.

DR. D. L. EDSALL exhibited a child with a large abdominal tumor thought to be a sarcoma of the kidney. The history was entirely negative up to two weeks before the child was seen. Then the mother noticed that the abdomen was prominent and hard on the right side. She knew nothing more than this. The child was pale, rather weakly, and very irritable, but seemed to have no pain. The abdomen was prominent on the right, especially in the upper half. The prominence was found to be due to a large mass of rounded surface somewhat more prominent in parts, but in general smooth. This moved freely upon respiration and was readily movable from side to side. The general form of the tumor corresponded quite closely to that of the kidney. It extended far back into the flank, but could be well pressed forward. The urine contained a small number of red blood corpuscles, but nothing else abnormal. The count of the leucocytes showed about 18,000 to the c.m.m. The differential count showed nothing of importance. Operation had been advised.

CONGENITAL HEART DISEASE.

DR. J. P. CROZER GRIFFITH exhibited a case of congenital heart disease, in which he had made the diagnosis of pulmonary stenosis, patulous ductus arteriosus, and perforate septum ventriculorum. He followed out the steps by which the diagnosis was reached and urged the importance of effort in all cases to come to a closer diagnosis than that of "congenital heart disease" merely.

Mitral stenosis is an extremely uncommon condition in congenital heart disease. If present it should give a diastolic murmur, and I have at no time heard such a murmur in this case. But if it were present it is probable that the right side of the heart would show a decided enlargement. This would

certainly be the case if the mitral stenosis was a post natal affection. This child has practically no enlargement discoverable. In any event, we still have the systolic murmur to explain.

One of my reasons for exhibiting this child was that a few years ago I reported before one of our local societies a case of perforate septum ventriculorum in which the diagnosis had been made during life and confirmed *post-mortem*. The criticism was made by one speaker that a diagnosis in congenital heart disease was generally impossible and never more than accidentally reached. While admitting the difficulty and often impossibility which attends, I believe this case illustrates the way in which a diagnosis can sometimes be made with very great probability.

AN USUAL FORM OF PARALYSIS.

Dr. Alfred Hand presented such a case. It was that of a child three years of age. It is the sixth child of seven. The fifth child of the family was born at seven months, dead. This child was born at seven months, and the seventh child, born last September, was also a seven months' child, and lived only five hours. The father, the mother, and the other children of the family are perfectly well. Aside from being a seven months' child, this one seemed to be normal up until the end of the first year; then the parents noticed a gradual loss of power in the left arm and leg, which have become spastic. This loss of power was very slight at first, but has gone on to the present condition. She never had any of the diseases of childhood, but each summer has had febrile diarrhœa. She is perfectly intelligent; can tell her name and can make attempts at motion. She can move the left hand but slightly. She can move the right foot with difficulty, but it throws the whole muscular system into activity.

There does not seem to be any difference in the measurements of the muscles. The muscles of the left side appear a little smaller than those of the right; this, however, could easily be explained by the lack of use. The knee jerks are present, not exaggerated, though I think a little more marked than is usual in children of three.

If the paralysis had come on suddenly I should have thought of cerebral apoplexy, but it came on slowly. This might be due to a thrombosis, the cause of which I would not venture to state. Why there is a paralysis to a certain extent of the right

leg also, and why that should be involved in a cerebral thrombosis is not clear. The right hand moves, but there is a little spastic element, and the muscle-tone is not as good as it should be. The left arm has been in a state of constant spasticity at each examination, but the mother says that it sometimes hangs perfectly loose. The child cannot walk; there seems to be no voluntary power in the muscles. In getting around she can roll over to the left side, but cannot throw the left side over the right. If the intellect were deficient I should think of a general gliosis, but with the cortex apparently uninvolved, it is puzzling to me what the condition is.

Dr. Eshner.—It seems to me that there might have been a subdural hemorrhage at birth. The fact that the symptoms were not observed at this time would have comparatively little significance because they would not appear until the child was able to exercise a certain amount of voluntary control over its muscles. As Dr. Griffith has said, there are distinct athetoid movements which seem to be in the nature of associated movements. The reflexes are exaggerated and there are other indications of heightened muscular tonicity. The child, further, seems to have a tendency to cross its legs in the manner characteristic of cases of diplegia. It is interesting that the patient was born at seven months, as one or more of the other children also were. This may mean the existence of some maternal pelvic deformity, in consequence of which, perhaps, hemorrhage beneath the dura was superinduced in the present case.

Dr. A. O. J. Kelly.—I am greatly impressed with the truth of the statement that, in certain obscure cases, unless the subject comes to necropsy, we cannot be assured of the correctness of a clinical diagnosis. The present case I am rather inclined to view as one of the forms of cerebral diplegia, but in view of the fact that the aunt states that the child's arm is at times entirely flaccid, and since when the child attempts to execute a voluntary movement, there is coincident contraction of both the flexors and extensors, as well as for other reasons, I think we might not altogether exclude an hysterical element from the case.

Dr. Hand.—With regard to Dr. Kelly's suggestion in thinking over the case I bore hysteria in mind as a last resort, but it seems to me that the clonic motions would exclude a simple functional disturbance. I believe that there is some organic

change, and I thought of a cortical hemorrhage. All the cases I have seen with that lesion have had subsequent paralysis with a greater spastic element, but I admit that some cerebral disturbance does appear to be the probable condition, although the absence of mental impairment is a point against such an explanation.

A CASE OF ERYSIPELAS.

Such a case was reported by Dr. L. M. Allen.

Dr. Jopson.—I saw the first case mentioned in Dr. Allen's report, that of the infant with erysipelas, and I had previously operated on the mother for a cellulitis of the arm which had some of the appearances of a streptococcus infection. There was a spreading phlegmonous inflammation extending beneath the flexor muscles of the forearm for a considerable distance, and requiring free incisions for drainage. The wounds in the mother's arm were not quite healed at the time the child developed erysipelas, and the inoculation of the child may have occurred directly, as we now know that the streptococcus pyogenes is in all probability identical with that causing erysipelas. The occurrence of scarlet fever in another child in the family simultaneously is interesting, because of the frequently repeated observations that cultures from cases of scarlet fever often show the presence of streptococci, and these have been designated as the cause of the disease by some observers, although the question of their significance is still an open one.

Dr. Ravenel.—It is true that the identity of the streptococcus found in erysipelas with the streptococcus pyogenes is generally acknowledged at the present day though there is not a great deal of direct evidence in the matter. I recall one case at the Presbyterian Hospital where a child was operated upon for empyema and the pus contained only the streptococcus. While enlarging the incision, in clipping through the rib a small sliver of bone flew off and struck the house-surgeon in the face. Within a few days he developed a severe case of erysipelas commencing in the wound, and evidently resulting from the inoculation. The case was reported by Dr. Arnold in the *University Medical Magazine.* I have seen two similar cases reported in European journals, the reference to which I am unable to give, but even with these, cases clearly proving the identity of the

streptococcus pyogenes with the streptococcus of erysipelas are rare, and this case is well worthy of record.

As Dr. Jopson has said the organism which causes scarlet fever is as yet undetermined. The streptococcus has probably been found more often than any other single organism, and the occurrence of these three cases in the one family, and their sequence, indicates the possibility that they all had the same origin, especially if other sources of infection can be excluded.

Study of Blood in Rickets.—Morse (*Boston Medical and Surgical Journal*), has examined twenty cases of active uncomplicated rickets in infants under two years of age. Three groups, according to the severity of the processes were made; those in which the manifestations are slight; those in which they are more severe; and those in which there is a splenic tumor. He concluded that most cases of rickets are accompanied by anemia of varying severity. As a rule, the severity of the anemia varies with the severity of the rachitic processes. The most common form of anemia is that in which the number of red corpuscles is normal or nearly normal and the percentage of hemaglobin is both absolutely and relatively diminished. The anemia may or may not be accompanied by leucocytosis. Leucocytosis occurs more frequently in cases with splenic tumor than in those without. The writer finds no form of anemia which is characteristic of rickets. The leucocytosis may be due to an increase of all the varieties of white corpuscles. The specific gravity varies with the amount of hemaglobin.

Facial Paralysis of Central Origin Due to Faulty Application of the Forceps.—Tissier (*Annales de Médecine et Chirurgie Infantiles*) reported to the Société d'Obstétrique de Paris the observation of facial palsy in an infant whose head had been injured by three unsuccessful applications of the forceps. The child died, and the reporter was enabled to observe that the scalp had been infiltrated and the brain suffused with blood; but there was no hemorrhagic focus in the brain itself, nor crushing or depression of the skull. The facial nerve was dissected out, and at no point in its course was there hemorrhage or serious pressure. On the paralyzed side the imprint of the forceps was found, but well above the course of the nerve. Tissier considers that the facial palsy in this case should be attributed to the more or less marked compression of the cranial vault—that is, to an action upon the nerve-centres. This theory, he thinks, explains the rarity of facial paralysis after skilful application of the forceps. —*American Journal of the Medical Sciences.*

MINUTES OF THE ELEVENTH ANNUAL MEETING OF THE AMERICAN PEDIATRIC SOCIETY.

Held at Deer Park, Md., June 27, 28, and 29, 1899.

The meeting was called to order by the President, Dr. W. P. Northrup, of New York, at ten o'clock. The minutes of the tenth annual meeting were approved as published in the ARCHIVES OF PEDIATRICS.

The following guests were introduced by the Secretary: Drs. Murdock and West, of Baltimore, and Drs. Deale and Motter, of Washington.

The following members were present: G. N. Acker, M.D., Washington; S. S. Adams, M.D., Washington; A. D. Blackader, M.D., Montreal; H. D. Chapin, M.D., New York; A. C. Cotton, M.D., Chicago; F. M. Crandall, M.D., New York; J. Dorning, M.D., New York; F. Forchheimer, M.D., Cincinnati; R. G. Freeman, M.D., New York; E. E. Graham, M.D., Philadelphia; J. P. C. Griffith, M.D., Philadelphia; C. G. Jennings, M.D., Detroit; H. Koplik, M.D., New York; W. F. Lockwood, M.D., Baltimore; J. D. M. Miller, M.D., Philadelphia; J. L. Morse, M.D., Boston; W. P. Northrup, M.D., New York; F. A. Packard, M.D., Philadelphia; C. P. Putnam, M.D., Boston; B. K. Rachford, M.D., Cincinnati; T. M. Rotch, M.D., Boston; A. H. Wentworth, M.D., Boston; J. P. West, M.D., Bellaire; T. S. Wescott, M.D., Philadelphia.

FIRST SESSION.—JUNE 27.

The annual address of the President, entitled "The Teaching of Pediatrics," was read by Dr. William P. Northrup, of New York.

Discussion by Drs. Rotch, Griffith, Chapin, Blackader, Forchheimer, Adams, Cotton, Crandall, and Northrup.

SECOND SESSION.—JUNE 27.

Dr. G. N. Acker, Washington, presented a case of porencephalus, and presented a photograph of the specimen.

Dr. A. Jacobi, New York, read by title a paper upon "The Children's Service of Roosevelt Hospital."

Dr. H. Koplik, New York, read a paper upon "The Increase of Weight in Artificially Fed Infants."

Discussion by Drs. Griffith, Rotch, Cotton, Adams, Crandall, Morse, Wentworth, Chapin, Blackader, Forchheimer, Northrup, and Koplik.

Dr. R. G. Freeman, New York, read a paper entitled "Separation of Bacteria from Milk by Natural Process."

Discussion by Drs. Cotton, Wentworth, Koplik, Forchheimer, Graham, Rotch, Adams, and Freeman.

Dr. S. S. Adams, Washington, reported a case of "Sarcoma of the Cerebellum in a Child," and presented the specimen.

Discussion by Dr. Wentworth.

Dr. J. P. West, Bellaire, read a paper entitled "Enlarged Lymph Glands as a Symptom of Lymphatism."

Discussion by Drs. Rachford, Chapin, Crandall, Northrup, and West.

Dr. C. W. Townsend, Boston, read by title a paper on "Congenital Heart Disease."

THIRD SESSION.—JUNE 28.

On motion the Secretary was instructed to telegraph to Dr. Francis Huber, of New York, expressing the sincere sympathy of the Society and the wish that he may have a speedy and complete recovery from his illness and recent operation.

Dr. J. P. C. Griffith, Philadelphia, reported a case of "Transposition of the Viscera and of the Great Vessels," and presented photographs.

Discussion by Drs. Chapin, Koplik, Northrup, and Griffith.

Dr. R. G. Freeman, New York, read a paper on "Abnormal Conditions in the Livers of Infants and Children."

Discussion by Drs. Wentworth, Rotch, Freeman, Koplik, and Blackader.

Dr. A. H. Wentworth, Boston, reported a case of "Meningitis Due to the Typhoid Bacillus."

Discussion by Drs. Koplik, Northrup, Freeman, Rotch, and Wentworth.

Dr. A. Caillé, New York, presented by title a paper describing a clinical diagnosis chart and record, a guide to bed-side diagnosis.

Dr. F. Forchheimer, Cincinnati, read a paper entitled "Vaccinoid."

Discussion by Drs. Putnam, Freeman, Dorning, and Forchheimer.

Dr. J. D. M. Miller, Philadelphia, read a paper on "Acute Articular Rheumatism in Infants under One Year, with Report of a Case."

Discussion by Drs. Crandall, Jennings, Koplik, Griffith, Cotton, and Miller.

Dr. H. D. Chapin, New York, read a paper entitled "The Question of Gruels in the Feeding of Infants."

Discussion by Drs. Graham, Morse, Cotton, Miller, Jennings, Blackader, Rotch, Rachford, Wescott, Griffith, Koplik, Crandall, Freeman, Dorning, Forchheimer, and Chapin.

FOURTH SESSION.—JUNE 28.

Dr. F. A. Packard, Philadelphia, read a paper on "Urticaria of the Mucous Membranes."

Discussion by Drs. Blackader, Wentworth, Miller, Dorning, and Packard.

Dr. J. L. Morse, Boston, read a paper entitled "The Renal Complications of the Acute Enteric Diseases of Infancy."

Discussion by Drs. Koplik, Adams, Chapin, Cotton, and Morse.

Dr. H. Koplik, New York, exhibited a new form of binaural stethescope for infants and children.

Discussion by Drs. Wentworth, Morse, and Koplik.

Dr. H. D. Chapin, New York, presented a new tongue depressor designed for infants.

Discussion by Drs. Wentworth, Koplik, Rotch, Blackader, Dorning, Wescott, Putnam, Forchheimer, Griffith, Adams, Crandall, Freeman, and Chapin.

Dr. J. H. Fruitnight, New York, read by title a paper on "Scorbutic Membranous Colitis."

Dr. A. D. Blackader, Montreal, read by title a paper on "Disease of the Thymus as a Cause of Sudden Death in Children."

Dr. L. E. Holt, New York, read by title a paper on the "Necessity of Prolonged Rest and Acute Heart Inflammation in Childhood."

FIFTH SESSION.—JUNE 29.

Dr. F. M. Crandall, New York, reported a case of "Scurvy in an Infant of Six Weeks."

Discussion by Drs. Dorning, Rotch, Graham, Griffith, Koplik, Wentworth, Adams, Northrup, and Crandall.

Dr. H. Koplik, New York, read by title a paper upon "Hemorrhage Following Exploratory Puncture of the Chest for Fluids in Infants and Children."

Dr. T. S. Wescott, Philadelphia, read a paper on "Cerebro-Spinal Symptoms in Epidemic Influenza of Infants."

Discussion by Drs. Wentworth, Chapin, and Wescott.

Dr. E. E. Graham, Philadelphia, read a paper on "Cystic Disease of the Kidneys in Children," and reported a case.

Discussion by Dr. Freeman.

Dr. A. C. Cotton, Chicago, reported three cases:

(*a*) "Extrophy of the Bladder."

(*b*) "Infective Endocarditis with Unusual Heart Lesions."

(*c*) "Anuria."

Discussion by Drs. Dorning, Packard, Northrup, and Cotton.

Dr. T. M. Rotch, Boston, presented specimens showing "Perforation of the Stomach in an Infant Seven Weeks Old."

Dr. Rotch also read a paper on "Multiple Osteomyelitis in an Infant."

EXECUTIVE SESSION.—JUNE 28.

On nomination of the Council the following officers were elected for the ensuing year:

President, . . .	HENRY KOPLIK, M.D., New York.
First Vice-President, .	E. M. BUCKINGHAM, M.D., Boston.
Second Vice-President, .	ROWLAND G. FREEMAN, M.D., New York.
Secretary, . . .	SAMUEL S. ADAMS, M.D., Washington.
Treasurer, . . .	J. PARK WEST, M.D., Bellaire.
Recorder and Editor, .	FLOYD M. CRANDALL, M.D., New York.
Member of Council, .	J. C. WILSON, M.D., Philadelphia.

Committee of Arrangements for the Congress, SAMUEL S. ADAMS, M.D.

Committee on Constitution, S. S. ADAMS, F. M. CRANDALL.

Place of Meeting—*Washington, D. C.*

Fee for Ensuing Year—*Five Dollars.*

The Auditing Committee reported the books of the Treasurer correct.

The following were elected to membership: Alfred Stengel, M.D., Philadelphia; Charles F. Martin, M.D., Montreal.

On motion, the thanks of the Society were extended to the Baltimore and Ohio Railroad for courtesies received.

On motion, the thanks of the Society were extended to Dr. Northrup for the manner in which he had entertained the Society.

FLOYD M. CRANDALL, M.D.,
Recorder.

Paralysis in Whooping-Cough.—Leroux (*Journal de Clinique et de Thérapeutique Infantiles*) presents a study based upon thirty-eight cases. Naturally, very young children, from one to five years of age, furnish the largest proportion of the cases, and such accidents usually appear during the convulsive stage or in its decline. Almost always the disease is severe, with violent paroxysms, fever, and often complicated with secondary infection, like broncho-pneumonia, and sometimes by coincident infections (influenza, scarlatina, tuberculosis). Four groups of cases, from a symptomatic standpoint, may be recognized. The onset of cerebral paralysis is usually sudden; during a paroxysm convulsions occur, followed by coma, which terminates in death or in return of consciousness, when the paralysis becomes manifest. More rarely hemiplegia or monoplegia comes on slowly. Exceptionally, the child develops a cerebral encephalopathy analogous to that of rheumatism: convulsion and coma.—*American Journal of the Medical Sciences.*

Addison's Disease During Childhood.—Dezirot (*Journal de Médecine*, August 28, 1898) has collected records of forty-eight cases of Addison's disease occurring during childhood, thus indicating that the affection is hardly so uncommon in that period of life as has been supposed. The youngest child was aged seven days, the eldest fourteen and a half years. The affection, which is almost invariably due to tuberculosis, is usually first manifested by very vague symptoms, such as weakness, anæmia, loss of weight, gastro-intestinal symptoms, nausea, vomiting, diarrhœa. Pain and pigmentation are quite uncommon in children. Convulsions are usual, intermissions frequently occur, and the disease pursues a more rapid course than in adults. Extract of suprarenal gland yields fair results in the treatment.—*The University Medical Magazine.*

Current Literature.

MEDICINE.

Aldrich, Charles J.: Head-nodding and Head-rotation; Usually Associated with Nystagmus in very Young Children. (*The American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 2.)

Of all the functional nerve-diseases of children few are more rare and none possess greater interest than the rhythmical nodding or horizontal rotary movements of the head, commonly associated with nystagmus. Medical literature makes scant mention of these cases. Some of the books on diseases of children briefly refer to the disorder, but seem to confuse the reader by associating it with *epilepsia nutans* or *tic salaam*, which, without doubt, is a true epilepsy.

The author reports several cases of the disorder. The records show a great preponderance of females attacked. Pure movements of assent, like the nodding of "a mandarin doll," are rare; gyral movements are most frequent, although a combination or alteration of the nodding with gyral movements is common. The movements are singularly smooth, easy, regular, and rhythmical—free from the spasmodic action suggested by some of the names under which they have been described.

Nystagmus may be monocular or binocular, vertical, horizontal, rotary, or mixed and alternating—one eye presenting one variety, its fellow another. Hadden says that binocular nystagmus is most common, which statement is open to question. He also states that the nystagmus may or may not correspond in direction to the movements of the head, but study of cases leads to the impression that in purely gyral movements of the head we are more apt to have a horizontal nystagmus, while the pure cases of head-nodding (which are very rare) usually exhibit vertical movements of the eye. Norrie, Henoch, and Hadden have recorded exceptions to this rule. Study of cases reveals the interesting fact that most cases of gyral movements of the head were associated with monocular nystagmus. Hadden gives one case of vertical nystagmus of the lids as well as the eyeballs. It is the only one of its kind that the literature affords.

Dr. Gunn, who examined many of Hadden's cases, suggested an alliance of these cases with epilepsy, and the latter was disposed to believe in the existence of the relation. Both of these observers witnessed a temporary abeyance of consciousness in two of the cases, neither of which, however, had a family history of convulsive disease. Out of a series of twenty-one cases observed by Hadden six yielded a family history of convulsions.

Henoch and other observers were quite sure that dentition was the chief exciting cause, and as the majority of the reported cases have occurred during that erethistic period of child-life, it certainly merits consideration. Hadden was disposed to recognize its claims, but broad-minded enough to confess mental reservation. Peterson's cases failed to impress him with its importance as a causative factor, and as one of his cases began at three months, one at four months, one at five, one at six, and one at seven months, we must recognize his doubt is natural and conservative. And since Hadden, Gee, and Peterson have observed cases at one-and-a-half, two, three, four, five, and seven months, and Henoch at three years, we must confess, notwithstanding the occurrence of our cases in the period of dentition, a belief that it is best to reject dentition as anything but a predisposing cause, such as it undoubtedly is in a large number of the ailments of childhood.

Rickets and other nutritional disorders have been observed in connection with the disorder with enough frequency to merit attention. Undoubted rickets was observed in nine cases of Hadden's series of twenty-one cases, and was markedly present in the author's first case. Neither Peterson nor Henoch mentions it. Most observers have referred to gastro-intestinal irritation as a cause, and certainly the author's cases point to this as a factor.

Traumatism is by Hadden carefully considered and recognized, while Peterson, Hirsch, and others regard it as the most potent of all exciting causes.

We must consider, before we accept these causes as *bona fide* ones, that, in the dispensaries of London, where Hadden observed his cases, rickets is the most common of all diseases of children, and that history of falls and bumps is but the daily history of childhood. Hadden reports three instances of head injury in his first series of cases; Peterson in two of his five

cases; Hirsch in his single case, while in one of the author's cases it was doubtfully present; in the second it was undoubted. Peterson says: "Perhaps concussion of some kind may be found in most of the cases to be the determining factor—a concussion setting up, in the centres of the spinal accessory and at times in those of the oculomotor nerves, an arhythmic discharge."

The question of diagnosis is one of examination. The spasmodic twitchings of epilepsy, the inco-ordinate, jerky, purposive movements of habit-spasm and chorea, essentially differ from the monotonously smooth nodding and gyral motions that are characteristic of the disorder under consideration. The peculiar head wagging noticed and admired as cute and pretty in precocious children when intensely interested, approaches the disease and indicates an actual strain of the association tracts. The wabbly, rolling heads of children with congenital nystagmus, vainly trying to fix head and eyes by the aid of a poorly endowed visual centre, either at the retinal or cortical end of a very complex and delicate connecting tract, bear some resemblance that the history alone will dissipate. The "head-banging" of Gee, in which young children turn on their faces during sleep and bang the face into the pillow a number of times; and "head-knocking," which in London is so often seen as a symptom of rickets in very young children, in which the little one seems earnestly happy while knocking its head with considerable force against some hard substance, are so totally unlike the preceding cases that one who has read carefully the accurate description of Gee and Hadden cannot fail to make a correct diagnosis.

The prognosis as regards life is good; no fatal case has been reported. Most cases tend to spontaneous cure in six weeks to three months, but many cases have a tendency to relapse if the child suffers any disturbance of health. Hadden observed one case that remained well for a period of two and a half years, and Gee's first case was found to be well and strong at the age of twelve years. While Hadden observed some slight mental deterioration, he was of the opinion that it would not persist.

The treatment that has seemed to expedite recovery is in itself an argument in support of the cortical exhaustion theory; nerve rest by bromides; rest and increased nutrition of the brain by recumbent posture. If the child is cachectic study the cause and remove it, be it struma, lues, tuberculosis, or rhachitis.

Quite a percentage of the cases seem to have rhachitis, and unless this condition is carefully sought and treated by diet, phosphorus, and lime, you will not have done your whole duty. Most painstaking and thorough should be the investigation of the digestive system and correction of all its errors. Judicious warnings should be given to parents of precocious children, urging them to forbear the exhibition of the unnatural brightness of the tender little minds, and to protect them from traumatism, as these children seem to be prone to fall, because they are slow to acquire spatial and postural judgment.

Moussous: The Value of Metallic Percussion Combined with Auscultation in the Diagnosis of Pleural Effusion in Children. (*Revue Mensuelle des Maladies de l'Enfance.* 1899. No. 1. *American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 4.)

The author calls attention to metallic percussion with auscultation (the coin-test) in the diagnosis of pleural effusions in children, and considers it a most valuable means in distinguishing between the dulness due to pleural effusion and that depending upon pulmonary consolidation.

The value of the coin-test in adult patients in conditions other than pneumothorax has already been investigated by Pitres, and later by his pupil, Sieur. Their observations have shown that when the lung is healthy the sound transmitted to the auscultating ear is obscured, smothered, and without metallic timbre. In the presence of a liquid effusion, however, whether it be serous, fibrinous, purulent, or sanguineous, formed in a pleural cavity free from adhesions, the transmitted sound has a clear, sharp, metallic ring.

Ordinary congestions of the lungs and the ordinary inflammatory or neo-plastic indurations fail to give the coin-test in its purity. The same is true of broncho-pneumonic foci, hæmoptoic infarcts, tuberculous infiltrations, and even encysted pleurisies and liquid effusions of the pericardium. Not only may the presence of fluid thus be recognized, but also the upper limit of the effusion in pleuro-pneumonia and the portion of the zone of dulness which corresponds with the effusion in pleurisies with false membrane. The author has devoted several years to study of this test as applied to young infants with the hope of proving its value in a class of cases which offers greater difficulties in

diagnosis than do similar conditions in the adult, and has demonstrated to his satisfaction that this test constitutes a very valuable addition to the ordinary methods of diagnosis.

He finds in the young child, as in the adult, the metallic click is muffled and loses its ringing timbre in traversing a healthy lung. The percussion should be made more gently than in the adult, and the non-ausculting ear should be stopped. The same quality in the transmitted sound is to be observed with broncho-pneumonia and croupous pneumonia. In these cases auscultation is made at the point where the vesicular murmur was suppressed or replaced by râles (whether dulness be present or not), the percussion being practiced at a point on the hemithorax diametrically opposite. Not only is the sound impure and without metallic ring, but the sound of the stroke itself is enfeebled, and is notably more muffled than on the healthy side; sometimes it disappears entirely.

In the presence of pleural effusions, however, the coin-test was very clear in four out of seven cases, and in the remaining three cases was clearer than on the healthy side, but lacked the silvery quality. In six cadavers of young infants varying in age from a few days to one year, with one of a child of six or seven years, artificial pleural effusions were produced with varying quantities of liquids, and the coin-test compared with the results before injection. In no case was the metallic timbre observed before the effusion was produced, while in only two instances did the sign fail, and in one of these the sound was clearer, but its metallic quality was not distinct. In both these cadavers, however, larger quantities of fluid (above 200 grammes) gave a successful test.

Labenberg, Chas. A.: Anterior Polio-myelitis, or Infantile Paralysis. (*Virginia Med. Semi-Monthly.* 1899. Vol. iii., No. 4.)

Infantile paralysis is defined as a motor paralysis, generally monoplegic, of muscles that are associated in function, followed by atrophy and electrical changes in them, with the cerebral, sensory, rectal, and vesical symptoms, slight or entirely absent.

The disease may be either acute, subacute or chronic, and has three stages—febrile or initial, the paralytic, and the chronic.

In the initial stage, the patient has fever, lasting from one to seven days—vomiting, headaches, pains in the muscles, slight coma, convulsions, and other reflex symptoms.

The paralytic stage generally follows this very closely, but it is no uncommon occurrence to detect a slight paralysis on the first day of the fever. The onset of the disease is always sudden. The paralysis is easily recognized by its flaccidity, coldness and bluish cast, due to poor circulation. It is usually general—affecting most of the voluntary muscles. In a few days there is a spontaneous recession, leaving only certain groups affected.

The most common form of paralysis, in the majority of cases, is monoplegia of the lower extremity. During the second week atrophy of the paralyzed muscle will be observed, as well as commencing alterations in the electrical response, and the limb will become smaller and changed in its contour.

Various deformities may result from this paralysis, such as varus, equinus, equino-varus, lordosis, etc.

Among the many agencies supposed to cause this disease the following are the most important: Syphilis, dissipation, age, infection, exposure to cold and dampness, trauma, acute diseases, and sometimes it appears to be idiopathic in its origin.

The disease is most often met with in infancy and between eighteen and thirty years of age.

The pathology of anterior polio-myelitis is still obscure, or at least not fully understood, notwithstanding our wonderful advances in the study of the pathology of nervous diseases. That it is due to the atrophy of the ganglion cells of the anterior horn is supposed to be the correct theory. Whether the inflammation is interstitial—affecting the neuroglia primarily—and then affecting the ganglion, or whether it is parenchymatous or ganglionic from the offstart, is still a debated question; but the profession at large generally accepts the former as the correct idea. This inflammation may involve all of the gray matter of the cord. That part which is mostly nourished and supplied with blood-vessels is the first to be involved. The germ theory has been advanced as a probable cause, and this theory is somewhat strengthened by the fact that the part mostly supplied with blood-vessels is the part first involved. There is also a decided change in the atrophied muscles, the muscular fibres disappearing and being replaced by adipose tissue.

The differential diagnosis is very important. Especially is this so at the very beginning, simulating as it does at this stage meningitis, the exanthemata and neuritis.

In meningitis, we have a great many more cerebral symptoms, more rigidity of the neck, the headache is more severe, and the coma and convulsions are more lasting than in infantile paralysis. Another important point is that in meningitis there are more cranial nerve affections.

In neuritis, the onset is more gradual, the nervous symptoms are fewer, and there is pain along the paralyzed muscles persisting for a long time.

The prognosis must always be guarded, as a complete cure is almost out of the question. We can assure the family that death is very rare, and if it does occur it will be in the first four weeks; then again, the mind always remains clear—a point it is well to remember, and so inform the parents. The resulting deformity may be so slight as to be hardly noticeable; but any one of the various deformities of the foot, as well as lordosis, may result. No correct prognosis can be given at the onset; but the greater the involvement of voluntary muscles, the graver should the prognosis be.

Treatment should be divided into two periods. During the first, it should be directed to the general condition, and the use of such medicines as will reduce the fever; a thorough purge; small doses of the bromides, quinine, ergot, and local irritation over the spine. Iodides are also given to a great extent as soon as the disease is recognized. Of course the diet should be nutritious and easily digestible.

After the acute stage, the paralyzed muscle should receive attention. The methods used to restore their tonicity and function are electricity, massage and gymnastic movements.

Electricity may be used once or twice a day, each sitting being about fifteen minutes in duration. The current should be just sufficient to cause slight contraction. Both the faradic and galvanic currents can be used together or alternately. If after several months' treatment deformities result, orthopedic measures should be resorted to as soon as possible.

Simmonds: Primary Congenital Hypertrophy of the Heart. (*Münchener Medicinische Wochenschrift.* 1899. No. 4. *American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 5.)

The author reports under this heading the *post-mortem* findings in the body of a new-born infant—the issue of healthy parents and normally developed—which had died during de-

livery. All the abdominal and thoracic viscera excepting the heart, were well developed and presented the microscopic alterations of their tissues. The great vessels, the canal of Botal, the umbilical vessels, fossa ovalis, and the valves of the heart, were perfectly normal in condition.

The dimensions of the heart, however, were extraordinary, measuring 5½ cm. in length, 6 cm. in breadth, and 14 cm. in circumference at the base. Its capacity was 45 c.c., and it weighed 44 grammes instead of 19 to 20 grammes, the normal weight of the heart of the fœtus at term. These excessive dimensions were due to a uniform hypertrophy of both ventricles, the right having a thickness of ¾ to 1 cm. and the left of 1 to 1¼ cm. There was no myomatous neoplasm localized in the form of a tumor. The only feature that distinguished this fœtal hypertrophy from the cor bovinum of the adult was that the papillary muscles participated only slightly if at all in the enlargement. Histological examination of the myocardium revealed no abnormality except some recent ecchymoses near the surface.

The author thinks that this condition of congenital hypertrophy is to be attributed either to circulatory disturbance or, as Virchow holds, to a diffuse myomatous neoplasia of congenital origin. In favor of the latter hypothesis was the fact that the hypertrophy involved only the ventricular walls and the septum, and not the papillary muscles.

Hecker, Rudolf: Contribution to the Histology and Pathology of Congenital Syphilis, as well as to the Normal Anatomy of the Fœtus and the New-born. (*Deutsche Arch. f. klin. Med.* Vol. lxi. Nos. 1, 2. *The Post-Graduate.* 1899. Vol. xiv. No. 3.)

The most important results of these researches may be summarized as follows:

1. Swelling of the liver is an almost constant phenomenon in syphilis of the ripe and unripe fœtus, while it is very frequently wholly absent in children who have lived.

2. The cell collections in diffuse and miliary syphiloma of the liver are to be distinguished from groups of cells which, on the one hand, correspond to proliferated epithelium, and on the other to new-formed blood cells. Both phenomena are normal in the fœtal liver, and disappear before or soon after birth.

3. This proliferation of the epithelium is increased by syphilis.

4. The liver is of the greatest significance as a blood-forming organ during fœtal life.

5. The nucleated young blood cells develop from the endothelia of the capillary walls; they are more numerous in the efferent than in the afferent vessels.

6. The structure of the portal vessel sheathes in the fœtus has a peculiar, richly cellular "adenoid lymphoid" character, and not until about the time of birth, and still later, does it approach that observed in older children and adults.

7. The kidney of the putrid fœtus, because of the late stage at which it undergoes maceration, is more adapted for histological examination than other organs. In syphilis of the fœtus the kidneys undergo a very decided increase in weight; on the other hand, in the fully developed fœtus, or in children who have lived for a time, there is a diminution in the weight of the kidneys. The participation of the kidneys in the pathological alterations of congenital syphilis is constant. Fœtal renal syphilis of mild degree is distinguished chiefly by infiltration of the cortical vessels; in fully developed children and in those who have lived for a time, it is manifested by atrophic and degenerative changes in the epithelium of the urinary tubules and glomeruli. The kidneys also take part in fœtal blood-formation, but only to a very slight degree.

8. Syphilitic tumor of the spleen is constant in the fœtus. An almost constant phenomenon of fœtal syphilis of the spleen is small-celled infiltration of the medium-sized and larger vessels.

9. The fœtal pancreas show an increase in weight under the influence of syphilis. These occur normally in the pancreas of the unripe fœtus islands of lymphoid tissue, which, probably, are to be interpreted as remains of an earlier developmental period. The same may be said of the parapancreatic tissue.

10. In the vessels of the funis, a non-infiltrated thickening of the walls, no matter how irregular, is no sign of syphilis. The vessels of the funis are frequently affected in a specific manner in congenital syphilis, and an examination of them may aid in diagnosing *intra vitam*.

11. Syphilis of the thymus may manifest itself by multiple abscess formation (Dubois' disease), and also by intense thickening of the connective tissue septa and compression of the lobuli.

12. Wegner's syphilitic affection of the bones is not constant, but is present in the majority of cases, and wholly absent in all non-syphilitic children.

13. A disturbance of the renal function (parenchymatous nephritis, albuminuria) can clinically be recognized in syphilitic infants.

14. The limit of grape and milk sugar, s. c., is very probably diminished in luetic infants.

Avellis: Inspiratory Stridor of Infants. (*Münch. Med. Woch.*, July 26th and August 2, 1898. *The Scottish Medical and Surgical Journal.* 1899. Vol. iv., No. 3.)

The author considers afresh the whole question of this so-called typical stridor of infants. The stridor begins at or shortly after birth, and may last for many months. There is considerable variation in its strength under varying circumstances. There may be indrawing of the sides of the chest and in the neck. The children are otherwise healthy and do not usually show any anxiety. Cyanosis and slight asphyxia may be present. It had been known to occur in more than one member of a family. The stridor subsided without any treatment. It might recur in adult life on any extra exertion. The condition had been known for a long time, but had been frequently confused with laryngismus stridulus, a totally different affection.

While the nature of this stridor and its relations had been fully described, more especially by Dr. John Thomson of Edinburgh, there was still a great difference of opinion as to its true explanation. The laryngoscopic appearances to which Löri had attributed it had remained unconfirmed, while the changes recently described by Sutherland and Lack as occurring in the epiglottis and ary-epiglottic folds were not the cause of the condition, but rather the result of some stenosis of the air-passages at a lower level. The theory which considered it as a glottic spasm secondary to a central neurosis was untenable and quite inadequate to explain the continued presence of a stridor for so long a time or its variability under different circumstances.

The author believed this stridor could be caused by the thymus pressing on the trachea or bronchi, as in two cases presenting an aggravated form of this clinical condition relief had been obtained by surgical interference with the thymus, a proceeding anticipated by Allan Burns years before. This view

had been further supported by the *post-mortem* examination of a case of chronic dyspnœa, in which an enlarged thymus was the only cause of death discovered, and in which tracheal compression could be demonstrated. There might be a difficulty in a differential diagnosis between this and enlarged bronchial glands even although the latter possessed distinctive features. Both conditions had been known to occur at the same time.

The author makes no reference to Eustace Smith, who again (*Lancet*, August 27, 1898) reiterates his belief that there are probably several distinct causes of laryngeal stridor in children. The good results which he has got in this condition from the removal of post-nasal "adenoids" lead him to consider their presence as by no means an unimportant factor in the production of such a stridor.

Hubbard, Joshua C.: A Case of Tetany. (*Boston Medical and Surgical Journal.* 1899. Vol. cxl. No. 8.)

Walter E. O. W., fourteen months old, entered the summer hospital on August 15, 1898, with a moderately severe attack of fermental diarrhœa.

The child was well developed and poorly nourished; weight eleven pounds four and one-half ounces; head large and square; two upper incisors only teeth present; chest rather narrow. Rosary present; abdomen prominent; very small umbilical hernia; very large epiphyses at wrists and ankles; phimosis with retained smegma; tibiæ slightly bent outward; heart and lungs negative.

During the last of August his temperature rose and a series of fluctuating swellings came on the back of his head. The first one that was opened contained only serum, but the second a little pus. The sub-occipital glands were enlarged to the size of beans and the induration and swelling extended down the neck and round onto the face.

September 6th. Last night a sudden acute attack with the following symptoms: Thumbs flexed across palms, fingers flexed, wrists flexed, knees slightly bent, feet in position of talipes equinus. All these joints held rigid by the tonic spasm of the muscles. At times neck rigid; at times chin can be brought down onto chest. Back rigid. Abdomen very much distended. Knee-jerks absent. No involvement of face. Pupils equal and react to light.

The spastic condition gradually disappeared so that by Sep-

tember 12th the only evidence of it was the increase in the knee-jerks.

The attack had no effect on the diarrhœa, which continued to improve slowly, or the appetite. He lost a little weight during it, but with the cessation of the acute symptoms began to gain again and left the hospital on September 13th, weighing eleven pounds fourteen ounces.

Boulai: A Case of Laryngeal Spasm Caused by Adenoid Vegetations. (*Archives de Laryngologie.* 1898. *Medical Chronicle.* Vol. x., No. 5.)

The patient, a child of six years, was brought to the author suffering from an almost continuous difficulty of respiration, which culminated at intervals, during the night especially, in attacks of violent laryngeal spasms. The paroxysms began abruptly a month after an attack of diphtheria, for which it was necessary to perform tracheotomy. On examination, the larynx appeared normal, except that the epiglottis, during inspiration, became curled into a species of V, the two halves of which almost met and nearly closed the laryngeal aperture. The only other noticeable abnormality in the upper respiratory tract was the existence of a moderate accumulation of post-nasal adenoids. At the first interview the post-nasal space was not explored with the finger, but at a later date this procedure was adopted, with the curious result that the laryngeal crises disappeared almost entirely for fifteen days. Finally, the adenoids were removed; the attacks of spasm then abruptly ceased, the difficulty of breathing vanished, and no relapse had occurred up to the time of publication. The author concludes that the spasm was purely reflex, and caused by irritation conveyed from the glandular overgrowths in the naso-pharynx.

Sykes, William: The Incubation Period of Chicken-pox. (*British Medical Journal.* 1899. No. 1985.)

A considerable difference of statement as to the incubatory period of chicken-pox is to be found in the literature of the subject. Dr. Tanner gives it as no longer than four days; Dr. George Gregory, four to six days; Dr. Heberden, who in 1761 first differentiated chicken-pox from small-pox, believed it to occupy eight or nine days; Dr. Bristowe gives it, as in some cases, exactly a week, but more commonly a fortnight; Dr. Eustace Smith practically the same, namely, from seven to four-

teen days; Dr. Goodhart, eight to sixteen days; the German author, Thomas, who quotes Körber and Hesse as agreeing with him, fixes the period at thirteen to seventeen days, as does Dr. McCombie; Dr. Liveing, at about thirteen days with eruption on the fourteenth; Dr. S. Gee gives the time as a fortnight; Dr. Clement Dukes, of Rugby (a high authority), fourteen to nineteen days; while Trousseau extends the incubation to so long a period as from fifteen to twenty days.

The author had the opportunity to observe accurately the incubation period in six cases, which he reports as follows:

INITIALS OF PATIENTS.	DATE OF INFECTION.	DATE OF ERUPTION.	LENGTH OF INCUBATORY PERIOD.
M. R.	April 17th	April 23d	6 days exactly
O. R.	April 23d and after	May 1st	Not more than 7 days
H. C.	May 2d and 3d	May 14th	11 or 12 days exactly
C. G., T. L., T. H., W. G., L. C., W. C., six children in all	" " "	May 17th	14 or 15 days exactly
P. L.	" " "	May 18th	15 or 16 days exactly
H. R.	May 3d or earlier	May 22d	19 days at least.

From the study of these cases the author draws conclusions, in substance, as follows:

1. We know so little what is taking place during the incubation period of microbic disease that we must not dogmatize on the subject. Two factors, however, we may assume to influence the earlier or later appearance of eruption in this class of cases: (*a*) The tissue resistance of the person infected, and (*b*) the amount of poison, namely, number of microbes received by him. The first factor is an obvious one, and quite sufficiently accounts for the cases where two children, who had apparently received the same amount of poison as their schoolfellows, developed the eruption, the one three days before, the other one day after, their companions. Of course, there may be accidental causes, such as propinquity or distance of seat in school, belonging to the next class of factors, which may have partly affected these results as well.

The second factor requires a little more consideration, but whether we believe the period of incubation to be occupied by the increasing of the invading microbes to such a sufficient number as to be able to produce by their irritation that peculiar inflammation of the skin which constitutes the eruption, or by the development of certain chemical poisons the resultant of bacterial occupation to produce the specific inflammation in question, it seems to me obvious that the more microbes can be introduced either suddenly or continuously during the period of infection, the more quickly will they themselves increase and multiply to the requisite saturation of their victims or the more quickly will they pour out their chemical excreta to the requisitely poisonous extent.

2. In consonance with the last theory one sees why six children exposed to practically the same dose of infection, absolutely all sickened on the same day. While two other children exposed to actual close bodily contact with infection sickened in a much shorter time—just exactly as inoculated chicken-pox takes a less time, namely, eight days to incubate—than the average fortnight of the naturally incurred infection. While, again, the elder boy, who was only exposed to infection for a short time, and in much less degree than his young brother, required the longest period of nineteen days to develop his eruption.

3. It thus appears probable, as is only reasonable from the above considerations, that the period of incubation of this class of disease is not a fixed quantity, but varies widely within certain limits; thus, while we may take fourteen days as the average period of incubation in chicken-pox, we have no great difficulty in accepting Tanner's four days or Trousseau's twenty-five days as outside limits in different directions to which the incubatory period may in certain, not perhaps very unusual, instances attain.

4. It is interesting to note in this connection that all the older writers quoted give much shorter periods of incubation in chicken-pox than the more modern ones, and that the more modern the author the longer period does he fix. Is this because we are closer and more accurate observers than our ancestors, or because, in consequence of our better ventilation and less stuffy rooms, the microbic poison is really less concentrated, and the period of incubation consequently longer than in earlier

times? If the latter be the case, we ought to find a corresponding discrepancy in the statements of earlier and more modern authorities on the subject of the incubatory period of other microbic diseases.

Coltart, W. H.: Acute Alcoholic Poisoning in a Child. (*Birmingham Medical Review.* 1899. No. 3. *Review of Reviews.* Vol. ii., No. 7.)

A boy, aged four, was brought at 10.30 A.M., to the hospital unconscious. He was said to have drank one hour previously five ounces of neat brandy from a bottle obtained in the absence of his mother. Almost immediately he lost consciousness. A mustard and water emetic was given, but did not produce vomiting.

The child could not be aroused; the face was flushed, the pupils were contracted and the conjunctival reflex was absent. About two ounces of what seemed pure brandy were vomited. The stomach pump was used; the washings smelt strongly of brandy. The pulse was of moderate tension and slow, the temperature 94°.

He was put to bed with hot blankets and bottles. Calomel (4 gr.) was given; a castor oil enema was followed by half-pint enemata of strong coffee every half-hour, and the stomach was washed out at the same intervals. During the next three hours little change was noticed except a rising temperature and the vomiting of a little dark-red fluid which gave the guaiacum reaction. Five hours after admission the temperature had risen from 94° to 97.6°, and an hour and a-half later the first signs of cerebral irritability were shown by two attempts at convulsions.

6 P.M.—Cheyne-Stokes breathing set in, it continued more or less typically until death. Two definite convulsions occurred producing opisthotonus and extension of arms.

8 P.M.—Temperature still rising, now 98.8°.

9 P.M.—Some continued rigidity noted in right arm; right eyeball twitching.

10.30 P.M.—Coarse twitching of right side, principally affecting the arm. Respiration quick and regular. Pulse 82. Temperature 101.2°. Rigidity of right arm has disappeared, He vomited at intervals through the night, but there was no evidence of enteritis. Temperature at 12 midnight, 103°; 1 A.M., 105°, coming down to 101.8° after sponging. Ice-bag

was applied to top and sides of head. Chloroform controlled the convulsions but the inhalation was not continued owing to their mild character.

7 A.M.—Heart failing; much secretion in tubes. Pulse can scarcely be counted, about 150. Liq. strychnine 2 m. every two hours.

11 A.M.—Abdomen rather distended and tense; no urine in the bladder. Temperature 100.8°.

12 noon.—Breathing irregular, stertorous, 54.

3 P.M.—Child died after two severe general convulsions. Had been pulseless since noon.

At the necropsy the dura mater was rather tense, the convolutions were a little flattened, the pia mater was injected. The stomach was contracted, but the mucous membrane was healthy. The liver was pale, the lobules chocolate color. No gross change could be seen, but microscopically there was intense acute fatty degeneration of the cells. The kidneys showed cloudy swelling. The urine contained albumin.

Hutchinson, Jonathan: Scrofula. (*Archives of Surgery.* 1899. No. 1. *Review of Reviews.* 1899. Vol. ii., No. 7.)

The degree and kind of relationship which obtains between bacillary tuberculosis and the various forms of disease known under the name of scrofula is of the deepest interest. If we could get rid of the tubercle bacillus, should we be free from scrofula? It may, possibly, be replied that many things pass under the name of scrofula, concerning which it is by no means proved that they have anything to do with tuberculosis. But it will be found very difficult to draw any definite lines. Lupus vulgaris stands, perhaps, as the best representative malady in this respect. There is, probably, no single scrofulous malady concerning which the collateral evidence of relationship with tubercular maladies is weaker. Lupus patients rarely become phthisical; they are often in robust health, and probably in a majority of cases the family history is negative. Yet respecting lupus vulgaris it has been demonstrated by innumerable observations that the tubercle bacillus may be detected in the apple-jelly growth which characterizes it. It is certainly, despite the negative facts, a tubercular affection.

The insignificant eruption now known as lichen scrofulosorum stands in the same position. It is acknowledged to be

tubercular on histological evidence, although it bears no outward resemblance to other affections of that class. We are thus driven to the conclusion that the local manifestations due to the presence of the tubercle bacillus may be most diverse. The tendency of advancing knowledge has been to suggest that all "scrofula" is tuberculous.

A very important part of the problem is to determine the relationship of the bacillus to the varied forms of inflammation. Are these varieties wholly determined by reference to the precise tissue attacked, or do the idiosyncrasy and existing proclivities of the individual exercise an important influence? Opinions have been recently expressed by eminent authorities which tend to discredit the long-cherished view that tubercular affections are hereditary. The now popular theory is that they are communicated either by food or by direct contagion, and that in all cases their manifestations are a matter of *de novo* development in the individual. This is not Mr. Hutchinson's opinion. One of the strongest arguments in favor of the tubercular nature of scrofula is that these diseases are interchangeable in transmission. Amongst the relatives of those who have suffered from unequivocal tuberculosis are most of the cases of chronic gland disease, bone disease, ulcerations of the cornea, and the like.

In a series of illustrative cases adduced by Mr. Hutchinson, especial attention is given to family history and to the relationship which different manifestations of scrofula appeared to bear to each other.

Editorial: Second Attacks of the Infectious Fevers (*The Medical News.* 1899. Vol. lxxiv., No. 17.)

It is becoming more and more certain, now that medical statistics are being kept with greater exactness, that second attacks of the infectious fevers are not so rare as was formerly thought. It is especially worth noting because the old idea, that one attack of a specific disease gave almost assured immunity from a second attack, sometimes led people to take insufficient prophylactic precautions when exposed to the disease for a second time. Even physicians permitted such exposure or protested but slightly against it. In the ordinary infectious diseases of childhood, it is now definitely known that second attacks are by no means rare, in fact are so common that no assurance of the existence of immunity in any given case is justifiable.

The subject has recently interested Professor Gerhardt of Berlin, who, besides being a distinguished general clinician, is the well-known editor of a standard German work on children's diseases. He has carefully collated the personal experience of his own medical students in scarlet fever and measles during a number of years. Taking their statements in connection with the statistics gathered from his hospital and private patients he is able to announce the following opinion: Of ordinary healthy young men about 20 per cent. have not had scarlet fever; about 1 per cent. of them have had two attacks and 10 per cent. of scarlet-fever patients, who have passed the period of youth, are experiencing their second attacks of the disease. As regards measles about 6 per cent. of young men in the third decade of life have not had the disease, about 2 per cent. have had repeated attacks, while of the young men of this age who acquire measles about 13.5 per cent. have had the disease previously. One of Gerhardt's students had had seven distinct attacks of measles.

Gerhardt's experience is not an unusual one. In *Progressive Medicine* Dr. Blackader quotes Feltz, who reported from Vienna certain undoubted cases of relapse of measles within a month after the first attack. He also cites Emmet, who has had a similar experience. He has observed altogether 122 cases of second attacks of measles occurring at varying intervals. There are a number of American authorities on children's diseases who have been calling attention to this feature. The subject is deserving of careful investigation and in this matter the statistics of a large number of general practitioners would be of great value. We should be glad to be able to contribute to the further elucidation of this important question by the publication of the personal experience of men whose large numbers of cases in family practice will undoubtedly throw conclusive light on the subject.

Bullard, W. N.: Paralysis Following Cerebro-Spinal Meningitis. (*Boston Medical and Surgical Journal.* 1899. Vol. cxl., No. 7.)

The author refers to certain forms of paralysis occurring in the course of cerebro-spinal meningitis and continuing after the acute stage of the disease has passed. They differ clinically from the ordinary forms of paralysis in certain respects, and do

not entirely correspond to the other forms of paralysis which are commonly described in connection with this disease. All the author's cases have occurred in children.

These cases, while at times and in certain stages precisely resembling cases of paralysis in anterior poliomyelitis, are to be distinguished clinically from the paralyses of infantile paralysis by the following conditions:

1. In cases of paralysis following cerebro-spinal meningitis we find that pain on passive motion of the limbs persists to a degree rarely, if ever, found in anterior poliomyelitis. Such pain and tenderness sometimes exists during the acute stage of anterior poliomyelitis for two or three days, but if it lasts much longer than a week the case is one in which the diagnosis is to be very carefully examined. It is not uncommon, on the other hand, for great pain, on passive motion of the limbs or of certain joints, especially the ankles, to exist in cerebro-spinal meningitis one, two or more months after the acute stage of the disease has ceased. Tenderness on pressure over the muscles also persists much longer than in anterior poliomyelitis where it rarely continues much beyond the acute stage, but it does not last long as the pain on motion, active or passive.

2. The character of the paralysis also differs, at least in the early stages, although later it is often nearly indistinguishable. There is always a tendency to spastic contracture in the early stages of the paralysis of cerebro-spinal meningitis. This is sometimes so marked that it is evident on casual examination—certain portions of the limbs are flexed and there is decided muscular resistance to passive motion due to permanent tonic contraction. More often, and particularly in the later stages, this tonic or spastic condition is not so evident and shows itself only or principally in the extreme degree of flexion (extension) at the ankle-joint, the foot often being in a position of equinus, its axis almost in direct continuance of that of the leg.

3. The knee-jerk is, on the whole, less affected than in anterior poliomyelitis. In other words, there seems to be a greater tendency to retain the knee-jerk. This is rather a question of degree than of anything else and may have been accidental in our patients. The knee-jerk is sometimes in this affection, as in anterior poliomyelitis, totally abolished.

4. In addition to these clinical signs we have the history of the initial attack to guide us. While certain cases occur in

which it is difficult to determine the character of the initial attack, as a rule the existence of the retraction of the head and of contractures of the muscles of the back or limbs, the continued presence of extreme tenderness or pain on movement and the duration of the acute stage of the disease enable us to determine more or less accurately the character of the case.

The author regards any case as suspicious in which the acute stage lasted more than seven days.

In conclusion, the author draws attention to the fact that the conditions in these cases closely resemble, if they are not identical with, those reported in certain epidemics of so-called anterior poliomyelitis, and to suggest that in some of these the disease, which assumes a more fatal course than is usual in anterior poliomyelitis, may really be cerebro-spinal meningitis.

HYGIENE AND THERAPEUTICS.

Northrup, W. P.: The Serum Treatment of Diphtheria in the New York Foundling Hospital During 1898. (*The Medical News.* 1899. Vol. lxxiv., No. 17.)

During 1898, 103 patients with diphtheria were treated with antitoxin at the New York Foundling Hospital, with thirteen deaths, a mortality of 12½ per cent. The diagnosis was confirmed by bacteriologic cultivation in pharyngeal cases. Laryngeal cases to the number of twelve have been included, in which on one cultivation the bacteriologic report was negative. It is stated by Health Board experts that frequently such cultures taken from the pharynx are negative, while at the same time the lesion has been proved to be laryngeal diphtheria.

Two of these patients required intubation, but all recovered. Experience at the Foundling Hospital leads the author to believe that these cases may fairly be considered diphtheritic. Rejecting these twelve cases altogether leaves a mortality of 14 per cent., which figure we may consider very satisfactory.

	CASES.	DEATHS.	PER CENT.
Pharyngeal, . . .	67	4	.06
Laryngeal, . . .	36	9	.25
Total, . . .	103	13	.12½

Statistics of immunity are not easily compiled. The strongest statement that can be made from the Foundling Hospital is that there has been so few cases as 103 (most of these patients

even being brought in from the out-patient department) and that we have within two years passed through an epidemic of measles without having a single fatal complication of diphtheria.

The antitoxin used in recent years has been that made by the Health Department of the city of New York. There have been no antitoxin joints, no pains, and transient rashes in (estimated) only one-fourth to one-third of the cases. These have been of so little moment as not to have been recorded in the histories. As an immunizing agent it has attained the highest ideal of therapy; it has preserved most lives, and preserved them intact.

In many ways the Foundling Hospital is a favorable place in which to test antitoxin. Greater New York thrusts into its care a large proportion of poorly developed new-born infants. Five of the thirteen fatal cases occurred in children under one year of age, and ten in those under two years; five patients that died were under one year of age; five were between one and two years, and three were between two and three years.

Gardiner: The Climate of Colorado in Diseases of Children. (*Journal of the American Medical Association.* 1899. Vol. xxxii., No. 4.)

As quoted by the *International Medical Magazine*, the author has made an investigation, with the following results: In all diseases of the gastro-intestinal tract, characterized by diarrhœa, such as enterocolitis, cholera infantum, dysentery, simple diarrhœa, etc., the testimony was overwhelmingly in favor of the climate of Colorado exerting a specific effect, both in rendering such diseases much less frequent and in diminishing their virulence when they did occur, the fatality in such cases in infants and children being small in Colorado as compared with States with less favorable climatic conditions. This unusually small number of diarrhœal diseases, and the low mortality from the same in Colorado is, however, not at all surprising, when we consider the etiology of such diseases. Their time of greatest prevalence and destructive effects upon infants is during the summer months, when continual heat is enervating, and fermentive changes in all foods are apt to be active. The heat in Colorado is never the humid, relaxing, long-continued physical depressor found in many of our large cities, and even rural districts, elsewhere. The sun is hot, withering, and fierce, at

times, but in the shade, and at night, the air is cool and comfortable. The milk-supply, due to non-septic dry air, moderate thermometric range, and, in most cases, better physical condition of cows, insures a better nutriment in bottle-fed babies; while the mother who nurses her baby has also this great advantage of environment, and gives to her child the vigor imparted by air and sunshine.

Still, George F.: The Treatment of Thread Worms. (*British Medical Journal.* 1899. No. 1998.)

After an extended study upon this subject the author concludes that the idea that the rectum is the chief habitat of the thread worm is erroneous and misleading; it is here that the worm, perhaps, most often causes symptoms—namely, itching and worry, but it is not here that the worm is most commonly found. It is most often present in the cæcum, and, in two-thirds of the cases it is also present in the vermiform appendix; moreover, in some cases it is found in the small intestine.

Any injection therefore which is only large enough to reach the top of the rectum or the lower part of the colon is not likely to do much good. Some have even gone so far as to say that injections are useless, on the ground that it is not possible to reach the cæcum by this means. Such a statement is no doubt perfectly true if the injection consists of only three to four ounces of fluid. With such a quantity no part higher than the descending colon is likely to be reached. But with larger quantities—twelve to eighteen ounces or more—it is quite possible to fill not only the cæcum, as is apparent in the treatment of intussusception by injection, but also the vermiform appendix, if one may judge from *post-mortem* experiments. Injections, therefore, are of the greatest importance, but it is essential that large quantities of the fluid should be used—a child of six to twelve years will often tolerate as much as sixteen to twenty ounces—and experience has shown that large injections of salt and water or of infusion of quassia are often affective.

Treatment by injection alone, however, often fails, and this is easily intelligible, for the large intestine varies so much in length, and therefore in capacity, in children of about the same age, that it is practically impossible to know what amount of fluid is required in any given case. Thus, in one child, aged fifteen months, the large intestine was 28 inches long, in another,

aged fifteen months, it was 34 inches, while in another, aged twenty-three months, it was 44½ inches long, and similar differences were found in older children.

Moreover, as the above observations have shown, thread worms may be present, though not very commonly, in the small intestine; and the chance of reaching these by any injection is very slight, even when they are situated, as is usually the case, only just above the ileo-cæcal valve. In the *post-mortem* experiments of the author, it was found that occasionally the fluid did pass up into the small intestine, but it is obvious that the conditions after death are so different from those during life that any conclusions drawn therefrom must be of very doubtful value.

It is necessary, therefore, to give drugs by the mouth also, and no drug has proved more effectual in the author's experience than santonin. At the same time the prevention of any possible conveyance of ova to the mouth must be attempted, for, as shown above, this is probably one mode of keeping up the supply of worms, and the cutting short of finger nails, and the prevention—by mechanical restraint if necessary—of scratching the anus, are no unimportant adjuncts to treatment.

The conclusions to which the above observations would seem to point, are:

1. That the appendix vermiformis is a common habitat of oxyuris vermicularis in childhood.

2. That the generally accepted view that every single ovum of oxyuris vermicularis must be swallowed before it can be hatched, is at least open to doubt, and there is a strong probability that the appendix vermiformis serves in some cases as a breeding place for thread worms.

3. That the presence of thread worms in the appendix may cause a catarrhal condition therein, as shown *post-mortem* by a swollen appearance, due to thickening of its wall.

4. That this swollen condition of the appendix due to thread worms is associated in some cases with pain in the right iliac fossa which may simulate ordinary appendicitis.

5. That in the treatment of thread worms large injections must be used, and in view of the difficulty of dislodging the worms from the appendix, and their possible presence in the small intestine, the injections should be combined with the administration of drugs by the mouth.

American Pediatric Society.

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THE RENAL COMPLICATIONS OF THE ACUTE ENTERIC DISEASES OF INFANCY.*

BY JOHN LOVETT MORSE, A.M., M.D.,

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The earliest reference to this subject which I have been able to find is by Duer, who, in 1870, reported a case of diarrhœa and nephritis in an infant of seven months. He raised the query whether the intestinal or the renal lesion was the primary, or whether both depended upon some blood lesion.

Kjellberg, however, did the first work in this line, and published his results a little later in the same year. They apparently form the basis for many of the statements made by subsequent authors. He made *post-mortem* examinations at the Allg. Kinderkrankenhaus in Stockholm on 143 infants, dead of acute or chronic enteritis. Nephritis was found in 67, or 46.85 per cent. He also studied both urine and kidneys in 3 non-fatal and 15 fatal cases of acute and chronic intestinal catarrh in children. He found that the urine contained more or less albumin, hyaline, and fine granular casts, and many small, round cells. Examination of fresh sections of the kidneys showed cloudy swelling, moderate fatty degeneration, and desquamation of the epithelium.

Pollack, in 1871, reported 12 cases of hemorrhage from the kidneys occurring in the course of intestinal disorders in children. Section showed thrombosis of the renal veins. His findings have been repeatedly verified.

Thomas, in 1878, stated that he had seen nephritis in acute intestinal catarrh in children, and opined that the irritation of

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the kidneys might be caused by organisms absorbed from the intestines.

Hirschsprung, in 1883, examined the urine of infants with intestinal disorders. He stated that section constantly showed a parenchymatous nephritis, and agreed with Kjellberg's opinions as to the frequency and great significance of nephritis as a complication of the intestinal catarrh of sucklings. He did not give the number of cases in which the urine was examined, however, and reported no cases.

Baginsky, in his work, "Die Verdauungskrankheiten der Kinder," published in 1884, mentioned organic constituents in the urine in primary dyspeptic gastro-intestinal catarrh and follicular enteritis, described nephritis in cholera infantum and chronic enteritis, and expressed the opinion that nephritis "is more common in chronic enteritis than is usually expected or known."

In his graduation thesis in 1887, v. Hoffsken said that albuminuria was a constant symptom of cholera infantum, and that the urine sometimes contained blood and pus. The quantity was often diminished, even to anuria. The sediment contained urates, epithelium, lymphoid cells and hyaline, and granular casts. The kidneys almost constantly showed more or less parenchymatous degeneration, varying from cloudy swelling to extreme fatty changes; sometimes embolic nephritis.

Jacobi, in 1888, stated that "nephritis is a frequent accompaniment of acute intestinal catarrh, 'cholera infantum,' and in many cases of chronic diarrhœa, also, the autopsy reveals parenchymatous nephritis." He gave no analyses of the urine, however, and reported no autopsies.

In the same year Hagenbach stated that "nephritis in acute and chronic intestinal catarrh in infancy should be remembered." He apparently considered that it was not common. In the discussion Thomas declared that nephritis was not a frequent occurrence in the intestinal catarrh of sucklings, and v. Jaksch said that he had not found albuminuria in acute intestinal catarrh.

Loos, in 1889, stated that "acute and chronic intestinal catarrh may be complicated by inflammation of the kidneys."

Epstein, in 1890, found, as a rule, no albumin in the intestinal catarrhs of small children which yielded to ordinary medication. In cholera infantum, however, the urine was only ex-

ceptionally free from albumin. He attached great importance to its presence.

Holt, in "Keating's Cyclopædia," published in 1890, made the following statements as the result of his observations on 70 autopsies: "Ever since the writings of Kjellberg it has been the custom to speak of the great frequency of nephritis in the diarrhœal diseases. My own observations have not confirmed his results. I have found well-marked nephritis in but a single case. Cloudy swelling of the epithelium of the tubules is very common, and is seen in all cases where the temperature has been high. Taking the cases as a group, however, the renal changes are just what one meets in pneumonia or in any other acute febrile disease, but are no more marked.

"Small quantities of albumin in the urine are not uncommon in cholera infantum, but casts and renal epithelium are very rare, and blood I have never seen. The kidneys at autopsy are found generally paler than normal, with a marked cloudy swelling of the cortex, but not more than is seen in many other febrile diseases of infancy, as, for example, pneumonia.

"In acute entero-colitis the urine is nearly always diminished in quantity and high-colored, and frequently is loaded with urates. It is not uncommon to find a small amount of albumin, particularly when the temperature is high. But albumin in large amount, renal epithelium, and casts are exceedingly rare. I have met at autopsy with but a single case in which there was nephritis marked enough to have seriously diminished the patient's chances of recovery or to have formed an important factor in the fatal result."

Jacobi, in a discussion in 1892, repeated his previous statements. He said, "there are cases of nephritis which complicate intestinal diseases. When we have to do with an acute or subacute intestinal catarrh, a prolonged seizure may give rise to secondary nephritis. I am positive that it will be found to be much more frequent than it was considered to be."

Le Gendre, in 1894, found that from 6 to 40 per cent. of the infants in asylums showed albuminuria. In dyspeptic infants he observed transient albuminurias during digestion. He considers that, outside of the infectious diseases, gastric troubles and the enteritides are among the more frequent causes of albuminuria.

Czerney and Moser, in 1894, found nephritis in 11 fatal cases of gastro-enteritis in infants under two weeks old. They did not examine the urine in 10 cases of dyspepsia. They conclude that in gastro-enteritis not only albuminuria, as is the case in many affections, but various forms of nephritis occur. On the ground of anatomical investigations these may be regarded as due simply to toxines. The urine contains varying amounts of albumin and the sediment shows hyaline and fine granular casts, epithelial cells and occasional red corpuscles. Sometimes the urine contains blood enough to make it red and the sediment contains red and white cells and blood casts. The conditions of the urine have no corresponding clinical symptoms. The affection of the kidneys does not influence the prognosis unfavorably, unless there be thrombosis of the renal veins. The frequency of nephritis as a complication diminishes with age. They found the most common pathological changes to be swelling and granulation of the epithelial cells of the convoluted tubules and feeble staining of their nuclei. There were numerous casts both in the cortex and in the papillæ. The interstitial tissue showed nothing abnormal. In certain cases, however, they found localized areas of round-cell infiltration, sometimes associated with hemorrhage. Micro-organisms were present in these areas. They consider that the etiology of the renal changes is double—the resorption of toxic substances and the penetration of bacteria into the organism.

Felsenthal and Bernhard, in the same year, published the most complete paper which has been written on the subject. Their results seem to have furnished the basis for most of the statements made by writers since that time. They reported 15 cases with autopsies. Ten of them were under one year and the oldest but two years. They were all cases of vomiting and diarrhœa. Twelve ran a rapid course and seem to have been fairly typical cases of cholera infantum. In two of the protracted cases the pathological changes were the same as in the acute; in the other there were marked interstitial changes everywhere.

The glomeruli showed none or very slight changes. There was fatty degeneration of the epithelium of the convoluted tubules, often extreme, in all cases. Swelling and granular degeneration was also present to a less degree. In 3 cases there was necrosis of the epithelium. The size of the lumen varied

according to the conditions present below. The tubules contained degenerated epithelium, casts, mostly granular, and not infrequently blood. Henle's loops and the straight tubules showed the same degenerative changes, but much less marked. The lumen was often much increased and not infrequently the epithelium was entirely gone. They contained many casts, most of which came from above, and often blood. The blood-vessels showed no important changes. Interstitial changes were present in but 1 case.

They consider that these changes justify the term--acute parenchymatous nephritis. They compare and show their similarity to the changes found in cholera Asiatica. They state that in these conditions, as in Asiatic cholera, there is a marked concentration of the blood. Hence they are inclined to attribute the pathological changes to the circulatory disturbances and the deficient nutrition of the tissues resulting from the concentration of the blood. They admit that toxic absorption cannot be entirely excluded as a cause but consider that it plays but a subordinate part. It may be the most important when vomiting and diarrhœa are slight and death results from toxæmia.

The urine was repeatedly examined in all these cases. It may have been in others also, although no statement to that effect is made. The quantity was not diminished as long as thirst persisted, but was later. The color was amber-yellow or very pale, often cloudy, sometimes, in the last stages, opaque and gelatinous. The reaction was usually strongly acid. Albumin was present in the majority of cases. As a rule there was none or very slight traces during the first few days of acute cases. Large amounts occurred mostly in severe cases lasting some time. However, there was sometimes considerable albumin in the beginning and sometimes none in long cases. The sediment often contained many renal elements when there was only a trace of albumin and often none when there was much albumin. There were cells, often granular, rarely fatty; casts, mostly granular, less frequently hyaline and epithelial; fat drops, free or on casts. Leucocytes and occasional red cells were also found. Mucus was almost always present. There was often much uric acid, sometimes urate of ammonia and calcic oxalate. Bacteria were sometimes found in fresh urine.

Seibert, in 1895, stated that in the previous six months he had seen 4 cases of acute nephritis in the course of acute gastro-

intestinal catarrh, accompanied by fever. In all cases of enteritis where the rise of temperature persisted for three or more days he found albuminuria. Whenever the sediment was examined the morphotic constituents of the urine always found in nephritis were never absent. In chronic enteritis he never found the urine free from albumin, casts and epithelia, white and occasional red blood corpuscles. He gives no data, however, as to the number of cases on which these statements were founded. He concludes "that the examination of the urine during enteritis has been neglected by many, for, otherwise, the fact that even modern writers do not mention the possibility of a complicating nephritis, would be inexplicable."

Jacobi, in a paper entitled "Nephritis of the Newly-Born," published in 1896, says: "We know . . . that acute or chronic intestinal diseases may be complicated with or followed by nephritis. . . . Quite frequently both acute and chronic intestinal diseases appear to be the causes of nephritis, which may be quite ominous. . . . The literature on the subject is but scanty. I have, however, reason to believe that even those who have known the connection between intestinal diseases and nephritis quite well have not published their experience." He reports 1 case in an infant of five days and refers to another. This is the only proof adduced for his very general statements. He then goes on to say that the secondary nephritis in intestinal diseases "evidently depends on the absorption of a toxine. . . . Their absorption is facilitated by some peculiar anatomical conditions.

"A predisposition to nephritis in the young is caused by the fragility of the blood-vessels in the newly-born; by the relative imperviousness of the young renal capillaries compared with the large size of the renal arteries; by the feebleness of the young intestinal muscle, which proves insufficient to expel toxic contents; by the extensiveness and size of the young intestinal blood-vessels and lymphatics and the large size of the villi, all of which favor the absorption of toxines."

Taft, writing in 1897, states that abnormal alimentary changes often stand in the relation of cause to effect in the nephritis of children, and that the changes in the intestinal contents give rise to a toxine or toxines which act injuriously upon the kidneys, just as do the toxines of the infectious fevers. He reports three unconvincing cases, and gives no further proof for his statements.

The text-books on the diseases of children, as a rule, pay but slight attention to nephritis as a complication of intestinal disorders. Ashby and Wright say that "albuminuria frequently occurs during acute diarrhœa," and that "nephritis and uræmic convulsions have been described by some authors."

Henoch states that "in acute gastro-intestinal affections" (fermental diarrhœa) "the urine very often, even in the first twenty-four hours or forty-eight hours, contains albumin, although formed elements of nephritis are found in only a part of the cases. In catarrhal diarrhœa" (ileo-colitis) "a complicating nephritis may be the cause of death."

Rotch says that in ileo-colitis "the urine is nearly always lessened in quantity, is high-colored, and sometimes contains a small amount of albumin, especially when the temperature is high. Acute nephritis is, however, rare in these cases." He makes no reference to the condition of the urine in other diarrhœal diseases.

Smith merely remarks that "the urine is scanty," and says nothing regarding either albuminuria or nephritis.

Vaughan says that in sub-acute milk infection his "own observations and belief support the views of these American authorities"—Holt and Smith. In chronic intestinal indigestion "structural changes in the kidney, with albuminuria, may occur."

Baginsky says that "nephritis is one of the most important complications of the acute dyspepsias and diarrhœas of children." He quotes his "former assistants," Felsenthal and Bernhard, as well as Czerney and Moser, and apparently bases his opinion largely on their work.

Lesage says that "renal complications sometimes occur in gastro-enteritis." He quotes Felsenthal and Bernhard largely, and evidently founds his statements on their results rather than on his own experience.

Renault says that "enteritis . . . and cholera infantum may be complicated by acute nephritis; this occurrence is happily rare. Prolonged digestive disturbances frequently enough cause chronic nephritis in the infant, almost always after having produced repeated hepatic congestion."

Holt practically repeats his statements in "Keating's Cyclopædia," and maintains his position.

Taylor and Wells state that acute exudative nephritis "occasionally follows the acute diarrhœal diseases," and that in

sub-acute milk infection "other diseases, such as nephritis, . . . not infrequently appear later in feeble children."

It seems rather hard to reconcile these varied opinions as to the frequency of renal complications in the acute diarrhœal diseases of infancy. It is noticeable, however, that few of them are based upon actual observations. The majority are either merely bald statements of opinion without any apparent foundation in fact or restatements of the opinions or conclusions of others, which latter may or may not have been based on actual experience. It is striking, nevertheless, that the great majority of those who have written special articles on the subject are convinced of the frequency of these complications.

Holt's is the only one of the text-books that gives any data founded on actual personal results. The slight notice which the majority of them give the subject, however, would seem to justify the assumptions that their authors have rarely met these complications and that they consider them of but little importance. It is possible, however, that they have never looked for them.

The articles of most value, because founded on facts, are those of Kjellberg, Czerney and Moser, Felsenthal and Bernhard, and Holt. It is hard to explain the discrepancy in their results. A possible explanation of the marked pathological changes found so constantly by Czerney and Moser and Felsenthal and Bernhard may be found in the fact that they studied scarcely any but very acute, rapidly fatal cases of what may probably be properly classified as cholera infantum. Although Kjellberg and Holt make no statements as to the character of their cases it is probable that they were more varied in type and included many of the less severe forms.

It is reasonable to suppose that all fatal cases of these diarrhœal diseases, which are often accompanied by high temperature, always by toxic absorption and sometimes by the entrance of bacteria into the circulation, should show more or less marked degenerative changes in the kidneys and not infrequently acute inflammatory changes. It is also reasonable to suppose that concentration of the blood in very acute cases may cause additional degenerative changes. It is presumable, moreover, that similar pathological changes occur in the great majority, if not in all, of the severe non-fatal cases and in many of the mild cases.

Most of the pathological changes which have been described are degenerative in character and not inflammatory. Even in the severest cases there have usually been no inflammatory changes or, if present, they have been very slight. The pathological findings, therefore, seem to afford but little justification for the statements as to the great frequency of nephritis in the acute diarrhœal diseases of infancy. They seem rather to show that this complication is unusual. They do show, however, what would naturally be expected in acute diseases accompanied by toxic absorption, *i.e.*, degeneration. Their chief prognostic importance is, therefore, probably rather as a measure of the degree of toxic absorption than of interference with the renal function.

The data given as to the condition of the urine, both in fatal and in non-fatal cases, are of much less value. There are no records of the results of the urine in any large series of cases and the statements made are almost all general. In addition to the examinations made in the fatal cases, already considered, the studies of v. Hoffsken, Epstein and Le Gendre are of the most value. While there is considerable difference of opinion as to the frequency with which albumin and pathologic organic constituents are found in the urine their results agree in a general way. The urine is, as a rule, diminished, sometimes suppressed. Albumin is more common and more abundant in severe than in mild cases. The amount of albumin is usually not large. The sediment contains renal cells, more or less degenerated, and casts, mostly of the fine granular form. Blood and blood elements are uncommon and, if present, occur only in small amounts. These changes are most marked in cholera infantum. This condition of the urine, however, is not that which is usually accepted as typical of acute nephritis. It corresponds rather to the type which is found in active hyperæmia of the kidneys. Unfortunately the classifications of renal disorders from the standpoints of the clinical examination of the urine and of the pathological changes are at present not in accord and attempts to reconcile them lead only to confusion. It is impossible to determine from the condition of the urine whether or not there are microscopic inflammatory changes in the kidney as well as degenerative. Pathologically, however, the diagnosis of nephritis depends on the presence or absence of inflammatory changes. This condition of the urine, nevertheless, is

that which is ordinarily found in many diseases in which there are degenerative changes, usually not accompanied by inflammatory changes, in the kidneys. In these diseases it is not ordinarily considered as indicative of acute nephritis and is not regarded of any very serious prognostic import. There seems to be no very evident reason why it should be considered to be of any different nature or of any more prognostic importance in the diarrhœal diseases of infancy.

During the summer of 1898 I examined the urine of 70 infants ill with uncomplicated diarrhœal diseases. They were all out-patients at the Infants' Hospital. Hence the urine was seldom examined more than once in the same case. They were all under two years of age, 47 being under one year. The urine was always obtained by catheterization. A No. 8 French, soft-rubber catheter was used. No difficulty was found in passing it, either in males or females, even in infants but two or three months old. At times, however, a little resistance was encountered at the neck of the bladder and the sediment almost always afforded a beautiful opportunity to study the epithelium of the urethra and bladder. Scrupulous care was taken as to the cleanliness of the catheters and, as far as known, no injury whatever resulted from their use.

No attempt was made to select any special line of cases as to type, severity or duration, but rather to examine as great a variety as possible. The clinical diagnosis was fermental diarrhœa in 64 and ileo-colitis in 6. The bladder of the only case of cholera infantum seen during the summer was empty.

The color and reaction of the urine were always noted and the specific gravity taken when the amount was sufficient. The test for albumin was always made by heat. No test was made for sugar. The urine was always centrifugalized, the whole amount obtained generally being used, and the sediment examined microscopically. It always contained many urethral and bladder cells.

The following points were noted in every case. The previous general condition; the present general condition; the rectal temperature; the duration of the illness; the presence or absence and the amount of vomiting; and the number and character of the dejections. The following table, arranged according to the day of the disease, gives these data as well as the results of the examination of the urine:

FERMENTAL DIARRHŒA.

No.	Day of Disease	Age Months	Previous Condition	Present Condition	Temp. Rectal	Vomiting	DEJECTIONS. No.	Color	Curds	Mucus	Blood	Odor	URINE. Color	Reaction	S. G.	Alb.	Sediment
1	1	6	Good	F. D. & N.	37.2	O.	Many	Green	O	O	O	—	High	Acid	—	O.	
2	1	11	Good	Normal	37.7	O.	6	Green	+	+	O	Foul	Pale	Acid	—	O.	
3	2	3	Poor	Small, Thin, Feeble	39.2	Much	8	Green	+	O	O	—	High	Ac. +	—	O.	Ū.
4	3	16	Good	W. D. & N.	37.8	4-10 i. d.	6-10	Green	O	+	O	Foul	N	Acid	1020	Trace	Occas. small round cell. Rarely a hyaline cast. Ammon. urates.
5	3	20	Good	W. D. & N.	37.4	O.	15	Yellow	+	O	O	Foul	N	Acid	1010	O.	Caō.
6	3	6	Fair	W.D. & N. Rickets	37.2	O.	Many	Green	O	+	O	—	Pale	Ac. +	1000	O.	
7	3	3	Fair	Fair	37.8	Little	0-8	Green	O	O	O	Foul	Pale	Acid	—	Slt. Trace	Few renal cells. Occas. hyaline and fine granular cast. Pus. Urates.
8	3	11	Good	Large and Fat	39.2	Some for 24	10-12	Y.&G.	O	+	O	—	Pale	Ac. +	—	O.	
9	3	10	Good	W.D.&N. very sick	40.0	5-8 i. d.	15-20	Y.&G.	+	+	O	Foul	High	Ac. +	1018	O.	Mucus.
10	4	10	Fair	F. D. & N. Sick	40.0	6-7 i. d.	5-6	Green	+	O	O	Foul	High	Acid	—	O.	
11	4	10	Fair	Better, 4d. later Fair, lost much wt.	38.9°								Pale	Ac. —	—	O.	
12	4	6	Good	W. D. & N.	38.2°	Some for 24	25-35	Green	O	+	O	O	N	Ac. +	—	O.	Amorph. urates.
13	5	11	Good	Normal	37.4	2-3 i. d.	12	Green	+	+	little	Foul	Pale	Ac. —	1002	O.	
14	5	11	Poor	Small, Thin, Bad.	38.4	Some for 24	7	Y.&G.	+	O	O	Foul	N	Ac. —	1018	O.	
				No better, 1m. later	37.8	Constant	15-20	Green	O	+	O	—	Pale	Ac. —	1003	O.	
15	5	7	Good	Normal	37.2°	Much.	Many	Y.&G.	+	+	O	—	Pale	Acid	1003	O.	
16	5	15	Good	Normal	38.2°	O.	7	Y.&G.	+	O	O	Foul	Pale	Ac. —	—	O.	
17	6	18	Good	Normal	37.0	O.	10-12	Green	O	+	O	Foul	N	Acid	—	O.	
18	6	6	Good	Normal	37.6°	O.	10	Green	O	+	little	—	Pale	Acid	1008	O.	Amorph. urates.
19	7	16	Good	W. D. & N.	37.4	Some for 5d.	10-15	Yellow	O	+	O	—	Pale	Acid—	1010	O.	Much Ū.
20	7	11	Good	W. D. & N.	38.0°	O.	10-12	Y.&G.	+	+	O	Foul	N	Acid	1006	O.	
21	7	22	Good	W. D. & N.	38.4°	O.	5-8	Green	+	+	O	—	High	Acid	—	O.	Ū.
22	7	9	Fair	W. D. & N.	37.5°	O.	10-12	Green	+	+	little	Foul	N	Acid	1011	O.	Ū. Mucus.
23	7	15	Poor	Thin, Pallid Well 7d. later	37.2°	Some for 4d.	6-8	Y.&G	+	+	O	Foul	N	Acid	—	O.	
					37.5°	Frequent.	9-10	Yellow	+	+	O	—	N	Ac. +	—	Slt. Trace	Occas. small round cell. Rarely a hyaline and fine granular cast. Amorphous urates.
													Pale	Neutral	—	O.	

No.	Day of Disease	Age Months	Previous Condition	Present Condition	Temp. Rectal	Vomiting	DEJECTIONS. No.	Color	Curds	Mucus	Blood	Odor	Color	URINE. Reaction	S. G.	Alb.	Sediment
FERMENTAL DIARRHŒA.																	
24	7	9	Fair	F. D. & N. Pale.	38.0	Much.	20	Green	+	+	little	Foul	Pale	Ac. —	—	O.	
25	7	14	Good	W. D. & N. Well	37.3	O.	6-8	Green	+	O	O	—	N	Acid	1008	O.	
26	7	20	Fair	F. D. & N.	38.0	O.	15	Y.&G.	O	+	O	Foul	N	Acid	—	Slt. Trace	Many cells, few renal. No casts.
				Nearly well, 1 wk. later.	37.4								High	Ac. +	—	Slt. Trace	Same. Caō.
27	7	13	Good	W. D. & N.	37.3	O.	12	Y.&G.	+	O	O	—	High	Acid	1024	O.	Amorphous urates.
28	7	12	Good	W.D.&N. Lost wt.	37.3	O.	Many	Yellow	O	+	O	Foul	Pale	Ac. —	1004	O.	
29	7	7	Good	Much prostrated.	41.0	Constant	15-20	Green	+	+	O	Foul	N	Ac. +	—	Lr. Trace	Numerous small round cells. Hyaline and fine granular casts and casts with cells adherent.
				Better, 3d. later.	37.8	O.	0						Pale	Acid	—	O.	
30	7	2	Poor	Small. Feeble.	38.0	Slight. 1d.	5	Green	+	+	O	Foul	Pale	Ac. —	—	O.	
31	7	14	Good	F. D. & N. Fair.	37.6	Some for 24	10	Y.&G.	+	+	O	—	Pale	Ac. —	1006	Slt. Trace	Much pus. Large round cells. (Turbid)
				Better. 2d. later.									Pale	Ac. —	1007	Slt. Trace	Much pus. (Turbid)
				11d. later.									Pale	Ac. —	1005	Slt. Trace	Much pus. Few large round and squamous cells (Turbid)
				1 wk. later. No G. I. symptoms.									Pale	Ac. —	1002	Slt. Trace	Pus. (slt. Turbid)
32	9	13	Good	Normal.	38.7	O.	8-10	Green	O	+	O	Foul	N	Acid	1014	O.	
33	10	22	Fair	Prostration.	38.2	Constant	15	Y.&G.	+	+	little	—	Pale	Ac. —	1004	O.	
34	10	3	Poor	Poor.	39.4	O.	10	Y.&G.	+	+	O	Foul	Pale	Acid	—	O.	
35	11	10	Good	Very sick.	37.8	Much.	8-10	Green	O	+	O	Foul	N	Acid	1011	O.	Ammon. urate.
36	12	9	Good	Good.	37.6	Often.	12	Green	O	+	O	Foul	N	Ac. +	—	O.	Ū.
37	13	13	Good	W. D. & N.	37.5	O.	8-9	Green	+	O	O	Foul	N	Ac. +	—	O.	Ū.
38	14	10	Good	Normal.	38.2	O.	15	Yellow	O	O	O	Foul	N	Acid	—	O.	
39	14	23	Good	Normal.	37.2	O.	7	Green	O	O	O	—	High	Ac. +	1024	O.	Amorphous urates.
40	14	11	Good	Normal.	37.5	O.	15-16	Green	+	+	O	Foul	N	Acid	—	O.	Amorphous urates.
41	14	23	Good	Good.	37.3	O.	4-6	Y.&G.	+	+	O	Sour	N	Acid	1028	O.	Ū.
42	14	8	Good	W. D. & N.	37.4	Much	10-11	Yellow	+	O	O	—	N	Acid	—	O.	Amorphous urates.

FERMENTAL DIARRHŒA.

No.	Day of Disease	Age Months	Previous Condition	Present Condition	Temp. Rectal	Vomiting	DEJECTIONS. No.	Color	Curds	Mucus	Blood	Odor	URINE. Color	Reaction	S. G.	Alb.	Sediment
43	14	7	Poor	P.D. & N. Lost wt.	39.2°	O.	20	Green	+	+	O	Foul	High	Ac. +	—	O.	
44	14	12	Poor	F. D. & N.	38.0°	O.	10	Green	+	+	O	Foul	Pale	Acid	1010	O.	
45	14	6	Good	Good.	37.0°	O.	15	Y.&G.	O	+	O	Foul	Pale	Neutral	1003	O.	
46	17	13	Good	Good. Improving.	38.0°	nonenow; hasbeen	5-12	Green	+	+	O	—	Pale	Acid	—	O.	
47	21	10	Good	W. D. & N.	37.4°	O.	10-20	Y.&G.	O	O	O	—	Pale	Acid	1004	O.	
48	21	16	Fair	F. D. & N.	38.0°	O.	12-15	Green	+	++	little	—	N	Acid	1016	O.	
49	21	19	Good	Normal.	37.2°	Much up to past 4d	3-20	Green	O	+	little	Foul	Pale	Ac.—	1004	O.	
50	21	10	Good	Normal.	38.2°	O.	10-12	Y.&G.	O	+	O	—	Pale	Acid	—	Slt. Trace	Occas. small round cell. Ū. No casts.
51	28	13	Good	W.D.&N. Lost wt.	38.2°	O.	7-10	Green	+	O	O	Foul	N	Acid	—	O.	Amorphous urates.
52	28	7	Fair	Lost much wt.	39.4°	Occasional.	3-10	Green	O	+	O	—	Pale	Ac. —	1006	O.	
53	28	3	Good	W. D. & N. Losing wt.	38.0°	Considerable.	6-7	Y.&G.	O	+	O	Foul	Pale	Ac. —	—	Slt. Trace	Occas. small round cell. No casts.
54	35	13	Good	Good. Lost much wt.	38.1°	After each feeding	4	Green	+	O	O	—	High	Ac. +	1030	Slt. Trace	Occas. small round cell. Rarely a hyaline cast.
55	35	11	Poor	Emaciated. Sick.	37.8°	Much.	15-20	Green	O	+	O	—	N	Acid	—	O.	
56	35	15	Good	W. D. & N. Prostration.	39.2°	Much.	8	Yellow	O	O	O	Foul	N	Acid	1015	O.	Ammon. urate.
57	35	12	Good	W. D. & N. Normal.	37.3°	O.	20	Green	O	+	O	—	Pale	Neutral	1003	O.	
58	35	8	Fair	F.D.& N. Lost wt.	37.4°	Occasional.	14-15	Green	O	+	O	Foul	Pale	Acid—	1001	O.	
59	35	12	Good	Flabby. Lost much	37.6°	O.	15	Green	O	+	O	Foul	N	Acid	1008	O.	Ammon. urate.
				Recurrence 3 wks. later.	37.8°	O.	15-16	Green	O	+	little	—	N	Acid	1007	O.	
60	35	4	Poor	P. D. & N.	37.0°	Rarely.	5-8	Y.&G.	+	+	O	N.	Pale	Acid	—	O.	
61	42	7	Fair	F. D. & N.	38.4°	Frequent.	10-12	Yellow	O	O	O	—	N	Acid	1021	O.	
62	42	12	Poor	Small, Thin, Bad.	39.4°	Moderate.	10	Green	+	+	O	Foul	High	Ac. +	—	Consid.	Small round cells. Occas. hyaline and fine granular casts. Ū and amorphous urates
				No better 3d later (Otitis media. Mastoid Abscess. Broncho-Pneumonia.)	38.0°	6-7 i.d.	3						N	Acid	—	Trace	Hyaline and epithelial casts. Ammon. urate.

FERMENTAL DIARRHŒA.

No.	Day of Disease	Age Months	Previous Condition	Present Condition	Temp. Rectal	Vomiting	DEJECTIONS. No.	Color	Curds	Mucus	Blood	Odor	URINE. Color	Reaction	S. G.	Alb.	Sediment
03	60	18	Good	W. D. & N. Lost wt.	37.4	Occasional.	5-6	Green	+	+	little	—	High	Acid	1010	O.	Mucus.
04	63	17	Good	Flabby. Lost much wt.	37.0	O.	20	Green	+	+	O	Foul	Pale	Ac.	—	O.	

ILEO-COLITIS.

05	4	23	Fair	Fair.	38.0	O.	20-30	Green	O	+	little	—	N	Ac.	+	1010	Slt. Trace. Occas. small round cell.
06	4	23	Good	Normal.	38.0	O.	very many	Y. & G.	+	+ +	Some	—	N	Ac.	+	—	O. No casts.
07	5	11	Fair	Pale. Normal. Better 11d. later.	38.5	Some at first.	15-20	Green	+	+ +	little	—	N	Ac.	+	—	O. Ū
08	8	23	Fair	Good.	37.2	O.	8	Y. & G.	+	+	O	—	N	Ac.	—	—	O.
09	14	8	Good	W. D. & N. Lost much wt.	38.0	O.	15	Green	+	+	+	Foul ?	N	Acid.	1011		O.
10	42	11	Good	Very sick.	37.4	Occasional.	8-12	Y. & G.	+	+ +	+	—	N	Acid.	1008		O.
					38.0	O.	15-20	Y. & G.	+	+	+	—	Pale	Ac.	—	—	O.
													Pale	Neutral	—		O.

\+ = Present. O = Absent. — = No data.

Sediment always contained many cells from urethra and bladder.

No. 02. Died 2 days later.
No. 7. Died 2 months later.
No. 4. No further data.
Nos. 53 and 54. Improving when last seen.
Nos. 25, 26, 29, 31, 50, 65. Recovered.

Outside of cholera infantum, this table contains almost every possible variety of case, whether as to duration, severity or combination of symptoms. It is hard to find any type of case which has not at least one representative. It would seem, therefore, that an analysis of the table should give fairly representative conclusions.

The color of the urine, estimated as for adults, was high in 12 examinations, normal in 33 and pale in 36. As the normal color for an adult is high for an infant of under two years, it is safe to consider that the color of the urine was higher than the normal in nearly 60 per cent.

The reaction of the urine was acid in all but 4, in which it was neutral. Estimated roughly with litmus paper, the acidity was high in 17 and feeble in 21. As the acidity of the urine in infants is normally feeble, the conclusion that the acidity was, as a rule, increased seems warranted.

The specific gravity was taken 41 times. The highest was 1030 and the lowest 1001. The great majority were within the normal limits for infants. In the light of the increased color and acidity it seems rather surprising that the specific gravity was not also increased. This apparent discrepancy is explained, however, when it is remembered that the specific gravity was taken only when a relatively considerable amount of urine was obtained. This, of course, was usually only in the cases in which an approximately normal amount of urine was being secreted. It is probable that it was higher in the other cases.

Although nothing was determined as to the total amount of urine passed in twenty-four hours, the color, the reaction, and, to a large extent, the specific gravity seem to justify the conclusion that on the whole there was a tendency to concentration of the urine. The concentration of the urine bears no evident relation to the duration or severity of the illness, the number or character of the dejections, and the amount of vomiting. A high temperature, however, was almost always accompanied by concentration.

Albuminuria was present in 11 cases. In one, however, the sediment showed that it was probably entirely due to a complicating cystitis. This leaves 10 cases, or a little more than 14 per cent., in which it was presumably due to renal complications. In 4 of these no casts were found. The sediment contained, however, more or less small, round cells, which may

have been renal in origin. In 2 cases hyaline casts alone were found; in 2, hyaline and fine granular casts; in 2, hyaline, fine granular and epithelial casts. No blood or blood elements were found in any case. Except in one instance, the amount of albumin was always small. In that one it was designated as considerable. In the others it was called a large trace in 1, a trace in 2, and a slight trace in 8. The number of casts was always very small.

Careful study of these cases fails to reveal the slightest relation between the presence of albumin or renal elements in the urine, and any symptom or set of symptoms. Nor does there seem to be any connection between them and the duration or severity of the disease. They were present as early as the third day, and absent in cases ill as long as nine weeks. They occurred in mild cases and were absent in severe ones, and *vice versa*.

In one case the albumin and renal elements had disappeared at a second examination after three days, and in another after seven days. In another, in which there was albumin but no casts, the albumin was still present at the end of a week, although the patient was nearly well. These three (23, 26, and 29) and two others (50 and 65) are known to have recovered. Two more (53 and 54) were improving rapidly when last seen. Another was not seen again, and nothing is known as to the ultimate result. It was a mild case clinically, however, and probably did well. One (7) died two months later, the gastro-intestinal symptoms having continued. No symptoms referable to the kidneys developed, however. The last case (62) died two days after it was last seen. The other complications—broncho-pneumonia and mastoid abscess—certainly had more to do with the fatal termination in this instance, however, than did the renal. A considerable number of the cases in which there were no renal complications, as shown by the examination of the urine, also died. It is evident, therefore, that albumin and casts were not of bad prognostic import.

Mucus was noted in the sediment in 3 cases, uric acid in 10, amorphous urates in 10, ammonia urate in 5, and calcic oxalate in 2. None of these, however, seemed to denote anything of practical importance.

CONCLUSIONS.—The following conclusions seem justified as regards the renal complications of the acute diarrhœas of infancy,

aside from cholera infantum. It is probable that more or less marked degenerative changes occur in the kidneys in many, if not most, cases. These degenerative changes are due to the action of bacteria or of toxines, almost always to the latter. Inflammatory changes are rare. As the result of the degenerative changes in the kidneys albumin and renal elements may be found in the urine. Albuminuria occurs in about 15 per cent. of all cases. The sediment contains casts, usually hyaline and fine granular, in about 60 per cent. of the cases in which albuminuria is present. The presence of albumin and casts does not justify the term "nephritis." Nephritis is a very unusual complication of the acute diarrhœal diseases of infancy. The occurrence of albumin and renal elements in the urine is not dependent upon any other symptom or combination of symptoms. It is not of bad prognostic import. Concentration of the urine is common. It varies with the temperature rather than with other symptoms. It is probable that more marked pathological changes, possibly somewhat different in their nature, occur in cholera infantum, and that the resultant changes in the urine are also more marked. It does not seem probable, however, that their prognostic importance is much greater.

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DISCUSSION.

DR. KOPLIK.—I published a paper in January in which I reported a number of cases of gastro-enteritis and the examination of the urine showed in the majority a trace of albumin and casts. In those cases I tried to trace a connection between the presence of these elements in the urine and some of the symptoms present. As you have heard from the paper, hitherto no such attempt has been made. I think Dr. Morse says there are no symptoms that can be traced to the condition of the urine and the process going on in the kidneys. I think it was Booker in the first place who pointed out that in the fatal cases of gastro-enteritis we not only had a distinct form of change present in the kidney, but also the presence of bacteria in the kidney. As to the symptomatology, I found that in the severer cases a peculiar and distinct form of œdema; not the œdema we find in scarlet fever, but an œdema where all the tissues were somewhat shrunken away. The child was ema-

ciated, and there was distinct pitting on pressure, very much like that found in some severe forms of atrophy with impending death. In many of these cases the vomiting was persistent and the children were rather apathetic, so that I thought possibly the condition of the kidney tended to increase the stupor. Of course, I was not very positive that these symptoms were due to the kidney, but they were more prominent than in the cases where the urine was not suppressed.

I found albumin present more constantly than Dr. Morse did and my method was to boil the urine, then add nitric acid and hold it up against a black background so that the least trace of albumin was found. I found that the amount of albumin was not commensurate with the presence of casts as did Dr. Morse, and that is a strange part of this affection. As to the presence of cast elements I found them much more constant than Dr. Morse did and I think it quite possible that our material was different. As to the prognosis I believe with Dr. Morse that the great majority of these cases get well under conservative treatment.

DR. ADAMS.—I have not entered into such an extensive investigation as Dr. Morse did, but I have examined a number of cases of infants with anuria, sometimes lasting for hours or a day, and the results have been just about what he has given. So far as the œdema is concerned I have seen a number of cases of colitis where, after the symptoms have disappeared, a marked œdema with general anasarca came on and an examination of the urine has failed to give any evidence of serious structural changes in the kidney. I have usually attributed this condition to hydremia and the loss in many instances of the comparatively small amount of blood. I have seen their hands and feet puffed and the eyes closed completely.

DR. CHAPIN.—I have been surprised to note in hospital practice what a large percentage of children with diarrhœa have albuminuria. I may also say that it is common in other diseases and I have sometimes thought that a study of the urine should be made in all the ailments of infancy, to determine in what proportion of cases the kidney is affected. The question arises as to the method of collecting urine from little babies. My own methods are perhaps very crude and I must confess I have a little anxiety as to passing catheters on babies. It is easy to pass them on girl babies but for boys I prefer to put a bag around the penis and collect the urine in that way. For female infants we might use a clean sponge applied directly over the vulva and in that way collect a sufficient amount for examination. I prefer this to catheterization, although when carefully done, as Dr. Morse did it, there seems to be no bad results.

DR. COTTON.—In regard to the collection of urine by sponge or absorbent cotton I think that has a tendency to filter the urine and thus cloud the results of the examination. Dr. Morse seemed inclined to apologize for the high specific gravity in his cases, but it has been my experience that in the enteric disorders with frequent discharges the specific gravity usually rises.

THE PRESIDENT.—Did you observe the children afterwards to see if any harm was done by the catheter?

DR. MORSE.—I was induced to undertake this investigation because of the looseness of the statements of many writers in many text-books as to the frequency of nephritis in these conditions. I am surprised that nobody has called attention to one weak point in my work and that is that the urine was examined but once in most of the cases. It is possible, therefore, that these babies may have had albuminuria either before or after the examinations, although they did not have it then. My results are for this reason open to criticism. The conditions under which the work was done, however, rendered separate examinations impossible.

As to the relation of restlessness and stupor to the condition of the kidneys in these intestinal disorders my opinion is that they are due, therefore, rather to the amount of toxic absorption than to the kidneys; that is, that the condition of the kidneys and the general system are the results of the same cause—toxic absorption. As to the discrepancy between Dr. Koplik's results and mine, I can only suppose that his cases were more severe than mine. I examined the urine against a dark surface and considered the least cloudiness to be indications of albuminuria. If there was any error it was in calling urine cloudy which was not.

As to the catheterization of babies I expected some criticism on that point, but I feel that it is perfectly possible with due precaution to catheterize them without doing any harm. I have seen many of these babies since. I did not examine the urine again, however, and there is the possibility that they had cystitis, although they showed no symptoms of it. I certainly should feel inclined to collect the urine in some other way if I could. With the babies that come to the Out-patient Department, however, you cannot use these other methods and cannot wait for the baby to pass urine. If you want it you must draw it.

ENLARGED BRONCHIAL NODES: A MANIFESTATION OF LYMPHATISM.*

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Within the past six years there have been under my care eight children in whom the diagnosis of enlarged bronchial nodes was made, and who were brought to me on account of the accompanying cough. The first two cases were published in the ARCHIVES OF PEDIATRICS for May, 1896, under the title "Enlarged Bronchial Glands Relieved by Creasote." The marked and speedy effect of small doses of creasote on the cough in these two children seemed to make the cases worthy of record on that account alone. The same beneficial effects of this drug in small doses was seen on the nodes and in the general improvement in the other six cases, but no similar effect was noticed on the enlarged tonsils and adenoids when present. The two cases published were brother and sister. The brother when fourteen months old had an attack of bronchitis followed by a cough lasting nearly nine months. It ceased during the summer to begin in the fall, but after coughing two weeks he was given creasote in half drop doses and in four weeks the cough ceased. The sister, two and a half years younger, when seven months old began with the same cough. It was as quickly relieved by the same remedy, which was administered to her for several weeks with permanent benefit to her general health. Further acquaintance with these two children and the care of the other six, leads me to believe there are other points of interest connected with these cases, not mentioned in the above paper.

The following is a history of one of the most marked cases: Florence W., female, when two years and three months old, had her first attack of spasmodic croup. It was repeated on the second night. She had been perfectly well the day before, her only previous sickness being summer complaint when eight months old. After the croup she regained her usual health with the exception of a frequent harsh cough. She was brought to me in August, after coughing nearly four months. Her father

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had a typical adenoid physiognomy, and a sister (the only other child in the family) had adenoids and occasional attacks of croup.

The patient has a full round face, but a thin, poorly covered body, and when undressed looks quite frail. The skin is clear and fair. Over the neck, particularly on the right side, and over the upper chest, are a number of long thick veins. In the neck, anteriorily and posteriorily, in the axillae and groins, are chains of hard and freely movable lymph nodes. The tonsils are very large, but do not interfere with nasal respiration; the circumvallate papillae are very prominent, and the spleen can be felt. Breathing is easy, is not quickened, and there is no change in the voice. There is increased dulness over the upper part of the sternum, none over the back. The respiratory sounds are weaker over the right lung, and much more so posteriorily. The sounds otherwise are clear. A faint venous hum can be heard over the upper part of the sternum that is increased ten-fold by holding back the head. All the other functions of her body are well performed and she has lost but two pounds in these four months of incessant coughing. After six weeks' treatment with creasote the cough was gone, the respiration on the two sides more nearly alike, the venous hum was fainter, the large veins not so distinct, and there was a gain of three pounds.

On the last day of the following April she contracted a bronchitis with a return of the former symptoms. The same treatment relieved all in four weeks after the cure of the bronchitis. Several examinations during the summer did not show any abnormal signs in her chest excepting that at all times there was a faint venous hum with her head thrown back that was no more pronounced than can often be heard with some apparently normal children. Some thickening of the superficial nodes remained. Again in last December there was a return. The cough had been coming on gradually for three weeks without any appearance of a bronchitis or other trouble to cause it. She looked more peaked than during the former attacks and was losing weight. She was thirty-eight inches tall and weighed thirty-one pounds. The circumference of her head was nineteen and a quarter, of her chest nineteen, and of her abdomen twenty inches. Her cough, now well established, was of the same harsh, croupy nature as before, and all the signs detailed above were present. She was given, at an interval of several days, two

injections of tuberculin without reaction following. Treatment was this time kept up for three months, and since she has had bronchitis once and croup once without return of the cough or other symptoms due to the enlarged nodes.

The oldest of the eight children was six and a half years and the youngest seven months old. The general condition, with but one exception, was poor; they were thin and pale, listless, and easily tired. The appetite was variable, the bowels usually regular. Only one, the first in the series, had any fever, and this was not continuous. None were suffering from rickets while under treatment, but four showed evidence of having had the disease. There were two cases in each of two families. Either one or both parents in each case showed they had had rickets, or adenoids, or were below the normal as to health in some particular. The surroundings in six were good and in two only fair. Each child was brought to me on account of a peculiar cough, and this was the prominent symptom in each. The cough was alike in all with but one exception. It was harsh, hoarse and hollow, such as is heard early in membranous croup. There would be from two to eight sharp, short barks, the number of paroxysms varying greatly and occurring with equal frequency day and night. There was no secretion nor evidence of pain or soreness. In one it followed acute bronchitis, in one spasmodic croup and in one frequently recurring attacks of bronchitis. In five no ascertainable exciting cause was found. One child had a whoop added to his hoarse cough at intervals of from two to fifteen hours, but there was never vomiting or expectoration with the whoop, nor signs of lung disease, and it was rarely heard at night.

In only one was there any difficulty in or change of respiration, and this did not in any way resemble an asthmatic attack. This was in the boy, three years old, who had frequent attacks of bronchitis. He had at times to make an appreciable effort to breathe. This was not in any way connected with his attacks of bronchitis or the cough. There was no change in the voice in any case. One had had this cough for nearly nine months, one for four months, and the others for from two to five weeks.

All were treated with small doses, *i.e.*, half drop, three or four times a day, of creasote, with the result that in from four to six weeks the cough ceased. In three it reappeared, and two of these had a third attack; all were promptly relieved again by

creasote. The continuance of the creasote for several weeks had a permanent effect on the nutrition of those children in whom it was continued so long. Prominence of the superficial veins of the upper chest was very evident in every case, to a lesser extent in the neck and of a few venous radicles in the face in half. There was puffiness of the face, particularly under the eyelids, in proportion to the enlargement of the veins. In the severer cases the puffiness remained the same at all times and in the milder ones it varied, often being absent. Dulness over the upper breast bone was present and distinct in three cases, extending a little to each side in one, but no dulness was made out in the back. Weakness of the respiratory sounds on the right side was very noticeable in two cases, to a lesser extent in two others, and no difference in the remainder was heard. In every case there was a loud venous hum over the upper sternum with the head thrown back; in some it could be heard with the head erect, but was intensified with the head back. The diagnosis of enlarged bronchial nodes was based on the character of the cough, the enlarged superficial veins, the venous hum and dulness over the sternum, the swollen face, the weak respiration over one lung, and the absence of physical signs of other disease.

Every child had enlarged cervical nodes, in six there was in addition large axillary nodes, and in five large inguinal nodes. All had large tonsils, two had adenoids that interfered with nasal respiration, the follicles of the tongue were prominent in three cases, in two the thyroid was made very distinct by throwing back the head, and in three the spleen could be felt.

One was given two injections of tuberculin, and two had one dose each. No reaction followed either injection, but the conditions were such as to render the result inconclusive.

It was with considerable hesitation and some doubt as to its correctness the statement was made that the enlarged bronchial nodes in the two published cases were tubercular. Further acquaintance with these two and the still further study of the six other cases leads me to believe the enlargement of these nodes in all was a simple hyperplasia and this a local manifestation of the status lymphaticus. The reasons for believing so are, 1st, The general enlargement of the lymphatic tissue, and 2nd, The condition of the children. A comparison of these cases with other subjects of the lymphatic constitution is difficult owing to the fact that the diagnosis in almost all the cases found in the

literature was made at the autopsy. If this condition consists only in an exaggerated susceptibility of the lymphoid tissue these cases can be classed as subjects of the lymphatic habit. But if, in addition to this susceptibility, there is to be included a hyperplasia of the lymphatic structures generally, with a persistent or hyperplasic thymus, and a hypoplasia of the heart and aorta with or without evidence of pre-existing rickets, then so much cannot be stated so positively.

In some of the reported cases of lymphatism there have been found *post-mortem* all the above; in others a general hyperplasia of the lymphatic organs only; in still others a persistent or enlarged thymus with hypoplasia of the vascular system, with at times changes due to former rickets. In the cases reported in this paper there was hyperplasia of a considerable part of the lymphatic system. In addition to the enlarged bronchial nodes there were present enlarged cervical nodes in all, in six in the axillæ, and in five in the groins. No local cause to account for this was found. All had large, pale tonsils and in four they were very large. Two had adenoids that interfered with breathing. In three the circumvallate papillæ were prominent, in two the thyroid stood out distinctly with the head held back, and in three the spleen was felt. No enlargement of other lymphatic tissue was made out positively. The majority of the nodes in the external groups were about one-fourth inch in diameter, of a nearly uniform size in each group, and were found on both sides of the body alike. They were present when the children were first seen, and for a long time underwent no change whatever, remaining small, hard, separate and painless. This is suggestive of previous enlargement of the bronchial group and also of other internal groups not palpable on account of their situation. The cough that was so quickly and thoroughly established in three of the cases following an acute catarrh, also suggests previous slight enlargements, the onset of the acute process causing a rapid increase to a symptom-producing size. Even had there been no previous enlargement of this group the remarkable growth there must have been in such a short time after the irritation began marks these children as unusually susceptible even when the proneness to lymphatic disturbance in children is considered. In five of the cases no exciting cause was found for the enlarged bronchial nodes. The uniform and stationary enlargement of the cervical groups did not indicate

an extension downward, nor was there intestinal disturbance to indicate an extension upward.

There are no symptoms or signs, so far as I know, upon which to base a positive diagnosis of hyperplasia of the thymus, nor of hypoplasia of the heart and aorta. It is doubtful if an enlarged or persistent thymus can be felt over the top of the sternum or cause dulness under it that can be differentiated. But little more can be said as to hypoplasia of the heart and aorta. This cannot often be made out with any degree of accuracy by physical signs. A congenital smallness of the heart is regarded by Beneke as a cause of general feebleness. Anæmia and an imperfect development of the body with an insufficient growth of heart and arteries have been noticed by others. These children were, with one exception, thin, poorly covered, pale and undersized, and this had always been their condition. The one exception had a good layer of fat, but was not a robust child. Five of them still remain delicate. Efforts to determine the presence or absence of hypoplasia of the heart and aorta were made in four cases. Physical examination of the cardiac region did not give any signs to indicate the presence of this condition. With the same children a comparison of the frequency, force and rhythm of the radial pulse was made with other children of the same age and with others of the same weight. With three of the four the pulse was as a rule quicker and usually weaker, but no difference was found as to irregularity. Ten days ago an opportunity presented to examine the two original cases, a brother and sister. The boy is now seven and the girl four and a half years old. He weighs forty-five and she thirty-seven pounds. He is forty-eight and she forty-one inches tall. The boy's pulse was eighty-eight and the girl's ninety-four when asleep. The boy's pulse was the stronger and the more irregular. He faints easily and is frequently sick while she is very seldom ill. The sister has two or three enlarged submaxillary nodes the size of a navy bean. The brother has enlarged cervical, axillary and inguinal nodes of various sizes (all small) and a mild venous hum. I consider the boy still has the lymphatic habit and the sister has not. These two facts warrant the belief in a small heart or aorta in at least some of these cases such as has been found at autopsy in the subjects of lymphatism.

Heretofore the most important question connected with this condition was the sudden deaths without apparent cause or due to very trivial causes. This and the importance of the clinical recognition of this state I will merely mention, and briefly call your attention to the more recent work of Dr. A. P. Ohlmacher, pathologist to the Ohio Hospital for Epileptics. He had published in the bulletin of the hospital the *post-mortem* results of six cases of epileptics, in four of which this condition was found. His examination of these cases indicated that the lymphatic constitution is associated with and a part of pure epilepsy, *i.e.*, epilepsy "beginning in early life, *grand mal* in type, and negative as far as extensive gross brain changes are concerned."

Dr. Ohlmacher has kindly sent me the proof-sheets of five similar cases, soon to be published, that strengthen the position taken in the first communication. His studies in this direction have progressed so far as to enable him to make the diagnosis of "lymphatic epilepsy" in the living and verify it at the autopsy. In a recent personal communication, he says that while there is not a decidedly pronounced enlargement of the superficial regional lymph nodes in the lymphatic epileptics under his care there is a moderate hyperplasia found in the children above the average.

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DISCUSSION.

DR. RACHFORD.—There is a group of cases that so closely resemble these just described that I think some notice should be taken of it. So similar is the clinical description that I felt, as Dr. West described his cases, that I could scarcely make a differential diagnosis. I have seen four cases this winter presenting these symptoms that were thoroughly relieved by removing the adenoids. Just before leaving home I saw another case operated upon where the diagnosis of lymphatic constitution had been previously made. Two or three of these cases which I followed throughout the winter were characterized by any number of attacks of slight bronchitis with little fever and possibly a little irritation about the throat; but the most troublesome symptom was the cough which was almost constant during the acute attacks. Then for a little while the cough would subside and the child would improve under almost any treatment. One of these children I did not see professionally after

the second day from the operation for adenoids and in one other case the recovery was so prompt that I saw it only two or three times after the operation. I have been inclined to look upon this group of cases as something in the nature of chronic grip. I do not believe the adenoids act alone as a reflex cause of the cough, but that there is something of chronic infection located in the adenoids which from time to time breaks out in new attacks.

DR. CRANDALL.—I quite agree with Dr. Rachford as to the frequency with which we find adenoids in these children with persistent coughs. In March I saw a child who had been coughing all winter. A prominent physician in New York had examined him and thought he found some suspicious signs in the right side of the chest. I found evidences of adenoids and had them and the tonsils operated upon by a specialist, so that it might be thoroughly done. The child was much better for six or seven weeks and the parents were delighted with the change. The child was then seized with grip, and developed one of these attacks of persistent day and night cough which lasted for more than a month. The family was almost worn out by it. I finally decided that I had to deal with the condition that Dr. West has described and I began giving creasote. The child certainly improved, more rapidly, however, when he was sent to the sea-shore where he made a complete recovery. The post cervical and superficial glands about the neck were also much enlarged.

DR. CHAPIN.—The paper reminds me of a number of cases of obscure cough where careful physical examination would show no apparent cause for it and where there were also no adenoids. One particular case of mine in a little girl of about eight years was reported in the *New York Medical Journal* some years ago. One day the mother came to my office saying that the child died the night before after a paroxysm of coughing. I secured an autopsy and found several enlarged bronchial nodes, one of which had broken down and formed an abscess, which was pressing upon the recurrent laryngeal nerve and in that way produced a cough, the cause of which I could not detect by physical signs. I believe there is much more mischief from enlarged bronchial glands than we generally suppose.

A CASE OF SARCOMA OF THE CEREBELLUM.*

BY SAMUEL S. ADAMS, A.M., M.D.,

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The following case came under my supervision in the fall of 1897, and is presented to the Society on account of the rarity of the condition.

E. A., white, female, aged four years, well nourished, and a fair complexion, was taken sick the latter part of June, 1897, the prominent symptoms being high fever and vomiting. At that time she was seen by her physician who prescribed for her and in a week's time she was apparently well. On the 13th of July following she was taken to the country and soon thereafter began to complain of intense pain in the head and under her right arm, frequently causing her to cry out. She would sleep a great deal during the day and would wake apparently much refreshed, when she would play at times for hours before the recurrence of the complaint of pains, which were invariably located in the head and under the right arm. While away from home, a weakness of the legs became manifest, the child frequently staggering and at times falling, her limbs seemingly being unable to bear her weight. During this time she slept well at night and did not complain of pain, the principal suffering being confined to the mornings and afternoons. After a stay of four weeks, the child not improving, she was brought back to the city, when she became very sick with fever and vomiting. She soon improved from this second attack, but the weakness of the legs continued. In the latter part of August she began to be very nervous, being unable to hold anything in her hands, and also showed an inability to sit alone. At this time also she lost control of her bowels and bladder, urinating and defacating apparently without being conscious of it. She was seen at this time by several physicians who gave an unfavorable prognosis and advised the parents to consult me about her.

This in brief is a condensed statement of the previous history of the case, as communicated to me in a letter from her mother.

* Read before the American Pediatric Society, Deer Park, June 27, 1899.

At the time of my first visit, I was told that the opinion had been expressed by the physicians who had previously seen her that the child was suffering from tubercular meningitis. After two careful examinations, I expressed the positive opinion that the disease was not tubercular meningitis, and that the symptoms were due to a tumor located in the cerebellum. The examination showed the child to be rather intelligent for her age, and she answered promptly and correctly questions put to her. She seemed well nourished and her digestive organs were apparently in very good condition. The nervous phenomena presented were principally peevishness, frequent complaint of pain in the head and slight rigidity of the lower extremities. The child could stand upon her feet if supported, but could not stand alone. She had the power to throw the feet forward, but invariably each foot would pass in front of the other, that is crossed action. Careful observation was made in this case, but it will suffice to give briefly the progress of the disease to the fatal termination. Some weeks after my attendance, the mother expressed the opinion that the child could not see, whereupon a test confirmed her opinion. At this time Dr. L. H. French, one of our ophthalmologists, made a careful examination but failed to discover anything that would throw light upon the case. At this time also Dr. C. L. Allen, the neurologist, examined the child, but would not express the positive opinion as to the location of the tumor. About the time of the loss of vision, enlargement of the head became noticeable, which continued to increase throughout the disease. Next the legs became crossed and perfectly rigid, so that great force was necessary to abduct or flex them, in attempting either the child would scream with pain. In a few more weeks the arms became rigid, and the same difficulty was experienced in attempting to move them. At no time during my attendance was there any fever, but vomiting at times paroxysmally characterized the attack. From about the first of January until her death, in the latter part of April, the child was frequently attacked with convulsions, at times confined to groups of muscles, at other being general.

The necropsy was made by Dr. D. S. Lamb. The head was very large and every suture in the cranium was widely separated. The brain weighed thirty-nine ounces, showed dilatation of the lateral and third ventricle, so that the brain itself presented a mere shell, being distended by a pale fluid, and the cerebellum

was much enlarged, its middle portion being converted into a rather soft tumor which involves also much of each hemisphere, and by extension has involved some portions of both pons and medulla, and has practically obliterated the fourth ventricle. Above the tumor was a broad flat cavity which contained a yellowish fluid and white flocculi. The ventricular dropsy was probably due to pressure on the venæ Galeni. Dr. Walter Reed pronounced this tumor a sarcoma.

1 DUPONT CIRCLE.

Absorbing Capacity of Children.—W. Jakubowitsch (*Med. Obos.*,) states that absorption by the gastric mucosa is much diminished immediately after lavage of the stomach. Elevated temperatures reduce the absorbing capacity of the stomach and rectum. Absorption by rectum is slowest in the infant and most rapid between two and four years of age. Aqueous solutions of potassium iodid are not absorbed by the normal skin.—*Journal of the Association.*

Prolapse of Vaginal and Rectal Mucous Membranes in an Infant with Spinal Bifida.—Pérignon, of Sedan (*Journ. de Sc. Med. de Lille*) has seen a rare case of congenital vaginal and rectal prolapse. The mother sustained two injuries during pregnancy. There was a sacro-lumbar spina bifida. The lower limbs were quite paralyzed. There was double club-foot, valgus on the left side, varus on the right. The anal orifice was gaping, and its mucosa prolapsed, and through the vulvar orifice a cylindrical tumor protruded, which carried on its surface an ulcerated area. It was at first thought that this mass was the uterus; but further examination proved it to be the prolapsed vaginal mucous membrane with its characteristic transverse rugæ. The cranial sutures and fontanelles were wide. The infant showed no other malformations, and lived for some weeks. There was difficulty in the evacuation of the bowels, and the fæcal matter was hard. The vaginal prolapse was first noticed on the third day of life. There was also a certain amount of true prolapse of the uterus, the cervix being nearer the vulvar orifice than usual.—*British Medical Journal.*

CONGENITAL HEART DISEASE; A STUDY OF THIRTY CASES.*

BY CHARLES W. TOWNSEND, M.D.,

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The following paper is a brief analysis of thirty cases of congenital malformation or disease of the heart. I am greatly indebted to Dr. W. H. Robey, Jr., who investigated the subsequent history of many of the cases. Most of the blood counts were made by Dr. Robey, a number by Dr. N. B. Potter, and one each by Drs. G. L. West, Capps, and W. C. Howe, to all of whom I wish to express my thanks. The cases were seen chiefly at the Children's Hospital, Boston Lying-in Hospital and Massachusetts General Hospital. Two cases were seen in private practice and one occurred in the practice of Dr. Robey.

The special points which seemed to me of interest in these cases are: First. The duration of life. Second. The amount and character of the cyanosis. Third. The cardiac signs. Fourth. The condition of the blood.

Duration of Life.—Of the thirty cases nineteen were followed to within the last year. Thirteen of these are known to have died at the ages of three hours, twenty-four hours, seven days, six weeks, three, four, ten and twelve months, two years, two and one-half years, seven and one-half years, nine years, and nine and one-half years. Thus eight or nearly two-thirds of these died under one year of age, and the average age at death was a little less than three years.

Six were living when last seen within a year, their ages being four months, thirteen months, ten and one-half, sixteen, twenty-three and twenty-eight years respectively. The four latter cases are especially interesting from their age, and will be considered later.

The eleven cases that have been lost sight of varied in age from two weeks to seventeen months when last seen. The sexes were equally divided in the thirty cases.

Cyanosis.—In twenty-five of the cases cyanosis was present at all times; in the remainder, occasionally only, with one ex-

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ception, where it was absent. This exception is a male two and one-half months old, with a heart enlarged to right and left, a loud, systolic murmur at the apex and a thrill to be felt. It is probable that cyanosis will develop as the infant grows older. In three cases cyanosis was not noticed until the infant was one month old; in one not till three months, in another at six months in another at ten months, and in one not until fourteen months.

In some the cyanosis appeared as a general blueness, so marked that it at once attracted the attention. In others there was slight duskiness with marked blueness of the fingers and lips. The mucous membrane of the mouth often showed the cyanosis markedly. In some cyanosis was limited to the fingers and lips. In all, anger, crying, or any exertion and cold, increased the cyanosis.

In one case, an infant of six weeks, with widely open ductus arteriosus and hypertrophied right ventricle, found at autopsy, the cyanosis became so intense with the exertion of straining for a movement of the bowels, that it was necessary to anticipate this by an enema.

CARDIAC SIGNS.—In ten, or one-third of the cases, there were no heart murmurs; in one I have no record, and in the remaining nineteen murmurs were present.

The ten who had no heart murmurs were all cyanotic. One of these had other evidence of malformation in extra fingers, club-foot and malformation of the lower jaw. In the remaining nine two autopsies were made; in one there was a very large ductus arteriosus, practically a continuation of the pulmonary artery, and a large foramen ovale; the other was the infant of six weeks whose autopsy is referred to above.

In the single case, where there is no mention in the history of a murmur, the child lived with mark cyanosis but one week, and the autopsy showed a perforation between the ventricles, a very large aorta and a small pulmonary artery.

In the nineteen cases the character and significance of the murmurs were often puzzling, and it is not my intention to discuss them here. In all there was a systolic murmur heard in nearly all over the entire cardiac area, but generally more intense at one point. In eight there was no special point of intensity, three of these showed thrills on palpation. In five the greatest intensity of the murmur was at the base and there were no thrills. In three it was loudest at the apex and accompanied by thrills.

In two it was loudest at the ensiform cartilage, one of these having a thrill. In the remaining one there were double blowing murmurs at base and apex and a thrill.

In the new-born infant the foramen ovale and the ductus arteriosus are both open. One would suppose, therefore, that a cardiac murmur might be heard. To determine this point one hundred new-born babies were examined at the Boston Lying-in Hospital, within the first three days of life. No murmurs were to be heard in these cases with one exception. This case showed a soft systolic murmur at the base only. The murmur continued for four days at maximum intensity, then became fainter, and had entirely disappeared by the seventh day. The infant was not vigorous, but showed no cyanosis.

THE CONDITION OF THE BLOOD.—In fourteen cases the red blood corpuscles were counted, and with two exceptions, one a partial one only, were found to be increased in number beyond the normal 5,000,000 in a cubic centimetre. This increase, sometimes very great, seems to be an accompaniment either as cause or effect of cyanosis from any cause. Thus Dr. Capps found, at the Massachusetts General Hospital, in four cases of acquired mitral disease in adults with cyanosis the following condition of the blood: Red blood corpuscles, 5,992,000, 6,012,000, 6,080,000, 5,476,000.

Dr. Richard Cabot has kindly permitted me to refer to two cases of his of cyanosis not congenital, where the increase of red corpuscles were extremely marked.

The first case, a woman of fifty-two years, had had increasing cyanosis for ten years. A blood count by Dr. Cabot showed 10,000,000 red corpuscles. The autopsy showed a normal heart and all the organs markedly congested. Cerebral hemorrhage was the cause of death.

The other case is under observation at the Massachusetts General Hospital. She is fifty-three years old and has been growing more cyanotic the last five years. Previous to that time there was no cyanosis. There are no murmurs nor enlargement of the heart. A blood count by Dr. Cabot showed 12,000,000 reds.

The only exception to the rule of the increase of red corpuscles in my congenital cardiac cases occurred in the only case where there was no cyanosis, and is therefore not an exception. The blood count by Dr. Robey showed only 3,937,500 reds.

The partial exception to the rule is such a remarkable case that it is worthy reporting in full.

Ida, C., an Italian, now twenty-eight years old, first came under my observation at the Massachusetts General Hospital in 1897. She has been blue from birth; she is not short of breath, does a good day's work and feels well. She is well nourished and developed, but her dusky blue color is very noticeable, being especially marked in her finger nails and lips which are very dark. Her pulse is good, her heart not enlarged and free from murmur, except at times a soft, systolic murmur at the base, which, I believe, is functional and has disappeared under treatment.

Her uterine or reproductive history is most interesting. She began to menstruate at fourteen or fifteen years of age and was generally regular. Two children were born at the eighth month when she was twenty-three and twenty-five years old; both died at or soon after birth. A third child was born in August, 1898, at the Boston Lying-in Hospital. She was markedly cyanotic, but not more so than usual during pregnancy, and she got about without difficulty. The labor was a normal one at full term, and the patient showed no exhaustion, the pulse being 80 before delivery and 82 after. The infant weighed seven pounds six ounces. When last seen a few months ago, the baby was strong and vigorous, with rosy cheeks, in marked contrast to the dusky blue face of the mother. It was breast fed. I know of no other instance in literature of a woman with congenital cyanosis giving birth to children.

The blood of this patient has been counted at five different times; twice it was over the normal 5,632,000 and 5,115,000, the former one month after delivery, the latter when four months pregnant, and three times under normal, 2,856,000, 4,000,000 and 4,528,000 (counts by Potter and Capps). All counted before pregnancy except the 4,000,000 count which was made two weeks before delivery.

The blood counts in the other cases are as follows:

In seven under one year they were:

5,955,555	(Robey).
8,051,111	(Robey).
7,144,400	(Robey).
6,586,640	(Robey).
8,000,000	(Robey).
6,570,000	(Capps).
11,800,000	(W. C. Howe).

In five cases over a year the counts were:

9,951,000	(Potter).
7,592,129	(Robey).
6,577,777	(Robey).
8,595,000	(Potter).
6,000,000	(Potter).

Brief histories of these latter five cases are worth recording.

B. S., a male infant of sixteen months, seen in consultation with Dr. G. L. West, of Newton. Cyanosis was not noticed until the infant was ten months old, when it became very marked on exertion. There was no noticeable enlargement of the heart, but a loud systolic murmur was to be heard at the base. Dr. West found 9,000,000 red corpuscles. Dr. Potter counted the blood some weeks later and found 9,951,000 reds, 11,600 whites, a hemoglobin percentage of 85.

Annie S., seven years old. Blue since birth, at times the cyanosis being very intense. Fingers bulbous. General development fair. Heart slightly enlarged; loud systolic murmurs heard all over the cardiac area, loudest in the third left interspace, not transmitted outside of apex line. Pulmonic second sound not accentuated. Blood count (Robey) 7,592,129. The patient was seen from time to time till her death from increasing lack of compensation at seven and one-half years.

Hazel L., sixteen years old. Has always been blue, especially on exertion. Moderate dyspnœa on exertion. The heart murmur was first discovered at three years of age. At the age of eight I found a slight hypertrophy of the left ventricle, dulness extending just beyond left mammary line, a distinct thrill over the whole body of the heart, and a loud, purring systolic murmur, loudest in the third left interspace. Pulmonic second sound not accentuated.

At sixteen years of age she was five feet one inch in height, slightly cyanotic, especially the lips and finger nails. The fingers were not bulbous. The precordia slightly bulging. Dulness extends from one finger's breadth to the right of the sternum to 1¼ inches to left of nipple. Thrill and murmur as before, but the murmur is now loudest at the apex. Blood count, 6,577,777 (Robey).

Nellie M., ten and one-half years old. Finger nails and lips blue from birth; general cyanosis first noticed at fourteen months, and the older she grows the more cyanotic she gets; marked dyspnœa on exertion with palpitation.

The patient is well developed, and tall for her age; cyanosis is marked, fingers clubbed. No increase in area of cardiac dulness, apex being in the fifth interspace inside the mammary line. Loud systolic murmur all over the cardiac area, loudest in the third left interspace. Blood count (Potter) reds 8,595,000, whites 6,800, hemoglobin 110 per cent.

Mary G., twenty-three years old. Has always been slightly cyanotic, with shortness of breath and palpitation on exertion. She has menstruated only nine times in all, first at twenty years of age and the last time seven months ago. She is poorly developed and slightly cyanotic. There are no cardiac murmurs nor enlargement to be found. Blood count (Potter) reds, 6,000,000, whites, 6,400, hemiglobin, 80 per cent.

SUMMARY OF THIRTY CASES OF CONGENITAL HEART DISEASE.

I. DURATION OF LIFE.—Of nineteen cases kept under observation thirteen have died at an average age of three years, the youngest being three hours, the oldest nine and one-half years. Of six living cases the youngest is four months, the oldest twenty-eight years.

II. CYANOSIS was present in all cases with one exception.

III. CARDIAC SIGNS were absent in one-third of the cases, two of these coming to autopsy and showing marked cardiac malformation. In two-thirds murmurs were present, generally diffuse and systolic in time, with or without a thrill and loudest either at the base or apex.

IV. BLOOD COUNT.—The number of red corpuscles in the blood was increased in all but one of fourteen cases examined, as is found to be the case in cyanosis from other causes. The exception occurred in the only case devoid of cyanosis. The average red blood count in thirteen cases was 7,573,585 red blood corpuscles per cubic millimetre.

76 MARLBOROUGH STREET.

ACUTE ARTICULAR RHEUMATISM IN INFANTS UNDER ONE YEAR, WITH THE REPORT OF A CASE.*

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Acute rheumatic polyarthritis in young infants, and even in children under five years of age, is of infrequent occurrence. C. Rauchfuss,[1] for instance, saw but 2 cases among 2,000 sucklings, and H. Koplik[2] 1 only in 7,000 sick children. Some writers, indeed (Cadet de Gassicourt,[3] A. B. Marfan[4]), look with doubt upon all cases in sucklings, while others (Baginsky, Senator,[6] J. Comby,[7] W. B. Cheadle,[8] H. Roger,[9] A. D'Espine et C. Picot,[10] Ashby and Wright,[11] H. Rehn[12]) regard its occurrence as extremely exceptional. On the other hand, A. Seibert[13] has seen "many cases under twelve months," and Pott[14] 21 instances during the first two years of life.

A critical examination of the published cases in very young infants supports the view of the above observers that, in the majority of instances, syphilis of the epiphyses, tuberculous bone disease, multiple neuritis, pyohæmic arthritis, the polyarthritis accompanying or following the acute infectious diseases, scurvy and even tetany have been mistaken for acute articular rheumatism. This is eminently true of those cases of arthritis reported by the earlier writers as occurring at or shortly after birth, following or accompanying, as so many of them do, blennorrhagic ophthalmia and vulvo-vaginitis, or septic processes in the mother or child. As Marfan[4] remarks, the recognition of gonorrhœal arthritis is of late years, and throws doubt on most of the earlier cases of acute rheumatism in infants, and the same may be said of scurvy and the pyogenic arthritides of sucklings. To Bouchard, Marfan[15] attributes the credit of first isolating clearly genuine rheumatic arthritis from those various pathological states presenting the clinical appearances, but not the nature of true rheumatism, and to which the former has given the name of "the pseudo-rheumatisms."

But infrequent as acute articular rheumatism is in infancy, there are a sufficient number of well-attested cases on record to

* Read before the American Pediatric Society, Deer Park, June 28, 1800.

show that the rheumatic state does occasionally exhibit itself in very early life in the form in which it is commonly seen in adults, *i.e.*, the arthritic. In atypical forms, however, we believe that rheumatism is quite common not only in childhood but in early infancy. W. B. Cheadle,[16] more than any other writer, has shown that acute rheumatism, as seen in adults, is uncommon in early life, and that, at the latter age, joint inflammation is "only one of many direct and sometimes independent manifestations of the rheumatic state." Thomas Barlow[17] takes practically the same view. The conditions which are regarded in adults as complications often manifest themselves in childhood and infancy as initial phenomena. The pain, perspiration and fever, for instance, are not apt to be marked, while the joint affection may be transient or limited to one joint, or may be absent entirely. Exudative erythema, endo- and pericarditis, pleurisy, tonsillitis, subcutaneous nodules, and, especially in infancy, obscure febrile attacks or nocturnal restlessness, possibly due to muscular pain, may be the only manifestations of the rheumatic state. The acceptance of the view that rheumatism in infancy and childhood is quite frequent is the only way to explain those instances of non-congenital left heart disease occasionally met with in very young children with no history of rheumatism. Schott[18] saw organic heart disease in a child of two years, and Goodheart[19] a babe of two and a-half months acutely ill with cantering action of the heart and a loud systolic bruit heard over the præcordia and in the back. Some years ago the writer had under observation a boy of three years with aortic stenosis and hypertrophy of the heart, the first symptoms of which (palpitation, etc.) the mother had noticed since about the fifteenth month; no history of rheumatism could be elicited.

But it is not with these aberrant forms of rheumatism in childhood that this paper is concerned. They were referred to for the purpose of emphasizing the frequency of the rheumatic state in the very young, and the probability, therefore, of the affection occasionally assuming the more common articular form of later life. Bearing in mind the essential features of the disease in adults, the following case is presented as a very probable example of genuine acute polyarticular rheumatism in an infant. It is regretted, owing to the fact that the patient was seen at the out-patient department of the Children's Hospital, that the clinical history is not more complete:

E. McD., female, nine months old, was taken sick on April 3, 1898, with fever and painful swelling of the knees. In a few days the left ankle was also attacked. After a week the swelling in the knees subsided and had left the ankle entirely, but a similar condition was noticed in the left wrist. The child had been restless at night and had refused its food. When first seen, on April 23d, twenty days after the onset of the illness, the following condition was noted: The left knee was swollen, slightly reddened and very painful. The right knee was also swollen, but to a less degree, and was not red. There was a slight but painful swelling of the left wrist. No other joints were involved. Temperature, 103°; pulse, 140. The heart sounds were rapid but normal. There was no sweating, nor had the mother ever observed any. The tongue was coated, the bowel movements natural. The lower central incisors were just emerging. A slight "rachitic rosary" could be felt, and there was moderate epiphyseal enlargement. The fontanelle was normal and no eruption could be seen. The infant was pale and anæmic. Since the third month it had been fed upon milk prepared with the peptogenic powder of Fairchild, and had always been well. Salicylate of sodium, 1 gr., and potassium citrate, 3 grs., were ordered every two hours, and the joints were wrapped in a solution of bicarbonate of potassium (10 grs. to the ounce). Two days later the swelling had left the knee, but the right wrist was red, swollen and painful. Slight swelling was still present in the left wrist. (This tendency to pass from joint to joint was characteristic of the whole illness.)

The child had been irritable, and the fever, according to the mother, high. At the time of the visit the temperature was 101⅜°; the pulse 120. A specimen of urine could not be obtained. The salicylate was increased to 2 grains every two hours. On the 27th of April the temperature was but a little above normal and the joints were materially improved. The salicylate was ordered every three hours. By the 30th of April the infant was very much better. No swelling was perceptible in the joints, but the knee and ankle were still painful on deep pressure. The bowels were natural and the digestion undisturbed. The patient was again seen at the expiration of a week and seemed quite well; no cardiac lesions were discovered. The continuation of the salicylate for a week longer, at eight hour intervals, was advised.

The child was visited at its home about three months after its last visit to the dispensary and the heart examined, but no lesion was found. The parents had never had rheumatism, and there was no history of exposure to cold and dampness. In the absence of signs of syphilis or scurvy, or the presence of any focus of suppuration or other infection, the conclusion seems unavoidable that this was a genuine case of acute rheumatic polyarthritis.

In the diagnosis of such an unusual affection as acute articular rheumatism in young infants every other possible cause of the joint affection must be excluded before we can assert that a given case is rheumatic. The various conditions which may be mistaken for acute rheumatic arthritis have already been enumerated on the first page of this paper, and need not be repeated here. A. B. Marfan[4] insists that, in determining the presence of acute rheumatism in infants, the following points must be established: Mobility, proneness to migrate from joint to joint, absence of all tendency to suppuration, frequency of inflammation of cardiac serous membranes, and favorable influence of the salicylates. To these should be added a family history, the presence of tendinous nodules and the absence of such affections as are apt to be attended by inflammation of the joints. In the following attempt to sift from the literature most of the cases of acute articular rheumatism in infants under one year, an endeavor has been made to maintain a more or less close conformity to the majority of these points. In making this inquiry an obstacle was at once met with in the difficulty of determining what is meant by acute rheumatism. If all suppurating cases of multiple arthritis, for instance, are rejected, we must remember that there are many instances of joint inflammation in infants that do not suppurate and yet are not rheumatic (T. Barlow). Also, that all the infectious diseases from chicken-pox to typhoid fever, as well as pneumonia and dysentery, may be attended with an infection of the joints closely resembling acute articular rheumatism. Indeed, acute rheumatism itself is probably a general infection, which may manifest itself without inflammation of the joints. In view of these difficulties, exception may be taken to some of the cases regarded as genuine, while to others, one or more of the doubtful ones may appear to be true instances of the disease. Of course, all cases appearing in the literature as acute articular rheumatism in infants will not be found in the

following list. A large number of reports of acute rheumatism were met with the clinical history of which had nothing in common with that disease, and which were, consequently, rejected. It will be seen also that some of the reports are extremely meagre—occasionally the mere statement that the author had seen a case. Here the standing of the reporter was considered in accepting the correctness of the diagnosis.

1. The youngest case is that of F. Earnest Pocock,[20] a babe twelve hours old. The mother, one month before her expected confinement, had rheumatic fever, for which salicylates were given. The rheumatism disappeared with the advent of labor. After the birth of a healthy child the mother's articular symptoms returned. Twelve hours after its birth the child had fever (103.5°), sour perspiration and red and painful swelling of right shoulder and elbow. Salicylates were administered. By the tenth day complete recovery.

2. Schaefer:[21] Child five days old. Mother had acute articular rheumatism in the last days of pregnancy, for which sodium salicylate was given, and from which she suffered for one month after confinement. When five days old, the previously healthy infant had swollen feet and a temperature of 38.7°. The swelling increased, and attacked successively the joints of left forefinger, left hip and small joints of both hands. All symptoms subsided in six weeks. Salicylate was given, but discontinued on account of vomiting.

The present writer is in accord with Jaccoud[22] and G. Singer[23] that these unique cases offer strong evidence of the infectious nature of acute articular rheumatism.

3. Alex. Guthrie:[24] Infant twelve days old. On the fourth day after labor mother had chill, fever and pain, and tenderness in umbilical region and upper abdomen. Relieved by cathartics. Three days later painful swelling of shoulders, wrists and knees. Salicylate gave speedy relief. In five days the babe had fever and red, hot and swollen left wrist and right knee. Salicylate gave relief, but in six days swelling reappeared in wrists and hands; alkalies substituted for the salicylate; recovery in thirteen days. No history of syphilis in parents.

It is possible that the mother's arthritis was secondary to the symptoms of puerperal infection on the fourth day, and the infant's affection may possibly have been of the same nature; but from the migratory character of the arthritis and the favor-

able influence of the salicylate and alkalies, it is placed among the acute instances of acute rheumatism.

4. T. M. Rotch:[25] Infant of two weeks. After exposure to draught during a bath, acute inflammation of all joints; movements extremely painful; recovery in four months; cardiac disease followed.

5. C. Mettenheimer:[26] Child not quite six weeks old; breast-fed; living in a damp basement; suddenly seized with fever and painful swelling of both knees and wrists. Recovery in a week under the use of local applications. Mother had just recovered from milk leg.

The observations on case 3 may also be applied to this case.

6. V. P. Zhnkovski:[27] Female, two months old. Mother had had acute rheumatism for some time. After exposure to cold, infant seized suddenly with fever (39.6°), pain, redness and swelling of both ankles and great toes. Salicylate gave relief. Recurrence in a few days in phalangeal joints of hands, wrists, both knees and shoulder joints. Complete recovery in a month. Purpura simplex was present, and a tendinous nodule on left hand. No cardiac disease.

The presence of purpura does not seem sufficient to exclude this case, especially in view of the tendinous nodule on the hand.

7. Karl Basch:[28] Female, thirteen weeks old; breast fed; rickety; acute arthritis of right shoulder and fever (38°). Within ten days left ankle and knee and right elbow successively attacked. Temperature, 38°, 39.3°. Pericarditis on twentieth day. Ten days later pneumonia. Salicylate of sodium administered; death. Autopsy: Clear synovial fluid and hyperæmia of synovial membrane in knee and ankle joints; lesions of pericarditis.

8. A. P. Dass:[29] Male, aged four months. After acute intestinal indigestion for two weeks, suddenly attacked with fever (103°), and hot, red and swollen knee and ankle joints of both legs. Symptoms subsided in a week under alkaline treatment. No history of syphilis. Illness attributed to exposure to draughts.

9. H. H. Kane:[30] Female, four months old. Good health, except eczema capitis. Right elbow, right knee and ankle swollen, tender and red. Amelioration in nine days under salicylate and opium. Pericarditis (friction and enlarged cardiac dulness) then developed. Great improvement in eight days.

Temperature, 104.3°. Three weeks later almost well and no abnormal heart sounds.

10. H. H. Kane:[30] An infant of nine months. No details.

11. Bouchut:[31] Male, of five months. Had otorrhœa. Suddenly fever, with red, painful swelling of ankle and knee joints. By eighth day ankle swelling disappeared, but knee affection remained a month.

This case, notwithstanding the ear affection, is justly regarded as genuine by Rauchfuss[1] and H. Rehn.[12]

12. J. C. Adams:[32] Male, six months old. After exposure to rain had fever (temperature, 102°; pulse, 140), and acute arthritis involving metacarpo-phalangeal joints of both hands and corresponding articulations of feet. Partial retraction of head and tenderness of post-cervical muscles. Bronchitis and otitis externa. Salicylate and quinine. Complete recovery in two weeks.

13. H. D. Chapin:[33] Mentions the case of a girl of six months in whom wrists and backs of hands were involved. No details.

14. M. H. Abelman:[34] Male, aged six months. Painful swelling of the knees. Then small joints of feet, right wrist, left ankle, small joints of hand and left shoulder attacked in succession. Fever and cutaneous hemorrhages. Heart normal. Recovery in twenty days under salicylate.

If peliosis rheumatica is an affection distinct from acute rheumatism, this case should be excluded; but owing to the uncertainty regarding this question, the reporter's view that it is genuine is accepted.

15. H. Koplik:[2] Female, six months old. Breast-fed; pain, heat and redness of joints of left foot, left wrist, small joints of fingers and left elbow. Temperature, 105.5°, 102°; pulse, 180. Profuse perspiration; no eruption; broncho-pneumonia present; ninth day, improvement; eleventh day, scarlatinal eruption followed by desquamation. Tenderness of joints did not disappear until the eighth week after the onset of the rheumatic affection; recovery. Author does not express opinion as to nature of eruption.

16. T. M. Rotch:[35] Infant of seven months had general acute rheumatism lasting until fifteenth month. Recovery without cardiac complications.

17. J. L. Stäger:[36] Infant of seven months; fever and erythematous eruption followed by hot and swollen ankle joint for

two days; convulsion then occurred. On tenth day contraction of cervical muscles with fever and signs of pleurisy. On twentieth day renewed contraction of cervical muscles, and in two days painful swelling of right wrist. Complete recovery by thirtieth day.

The doubt expressed by Cadet de Gassicourt[3] as to the rheumatic nature of this case is to be noted. It is placed in this list because of the migratory character of the joint affection, and because, with the subsidence of the latter, there was inflammation of the spinal arachnoid and pleurisy; it is, however, open to doubt.

18. H. Koplik:[2] Healthy, breast-fed infant, nine months old. Redness, swelling, and heat of all metatarso-phalangeal joints of all toes, followed by involvement of similar joints of hands. Temperature, 102°; pulse, 126. Vomiting, restlessness, and cough; infant anæmic; recovery in eighteen days.

19. R. J. Garden:[36] Male, nine months old. Fever, with red, swollen and tender right ankle. Then successively similar condition of left knee, right ankle and left hand and thumb; no complications; salicin prescribed; recovery in fourteen days. Attributed to frequent bathing in cold water.

20. E. Henoch:[37] Infant, ten months old. Fever, with pain, immobility and swelling of right hand, right elbow, left ankle and knee; broncho-pneumonia and pleurisy; arthritis lasted two or three weeks. For a long time crepitation present in right elbow. Myositis rheumatica of adductors of thigh followed, and persisted for three weeks; whole course, four or five weeks.

21. H. D. Chapin:[33] Healthy male, eleven months old. Parents lived on a canal boat; father had rheumatism. Right elbow swollen and inflamed; next, right knee; later, left side of neck; no cardiac lesions; improvement under sodium salicylate.

22. H. Rehn[12] mentions a case one year old. No details.

23. Austin Flint[38] speaks of a case in an infant of one year. Aortic lesions and hypertrophy of the heart existed at the age of two years.

In addition to the above are the following cases, reported in the literature as genuine instances of acute articular rheumatism, but which, judging from the clinical history, must, in the writer's opinion, be regarded as doubtful. In this list are omitted all suppurative and blennorrhagic cases, such as H. Wiederhofer's[39] case, which followed ophthalmia; Bouchut's[31] four suppurative cases;

C. Rauchfuss'[39] two blennorrhagic cases; the case of A. Strümpell,[40] with purulent arthritis; and those of Paasch[41] and G. Crusiz.[42]

24. J. P. Thomas:[43] Infant of three weeks. Mother subject to rheumatism, and father died of rheumatism of the brain. When first seen child had double pneumonia and bronchitis. Three days later left knee and ankle swollen, hot, and painful; perspiration sour; symptoms subsided, but in two days recurred. Salicylate of sodium and acetate of potassium administered; improvement. In a week left elbow and wrist attacked, with rigidity of cervical muscles and retraction of head. Amelioration of all symptoms. On the twenty-fourth day of illness baby became restless and died quite suddenly.

25. J. K. P. Caldwell:[44] Infant of two months. A few days after prolonged exposure to cold, had tenderness on pressure of forearms and hands, and on legs below knees. Temperature, 105°. Constipated and passed uric acid from birth. Sodium salicylate and acetate of potassium given. On eighth day convulsion, opisthotonus and carpo-pedal spasms. Characteristic cushiony appearance of backs of hands and feet. Death; no autopsy.

This seems to be a case of tetany.

26. B. Dozier:[45] Healthy male of nine months. For two nights before onset restless and vomited. Left leg was swollen, red, hot and painful. Knee and hip sensitive. Dover's powder. Next day condition unchanged; salicylic acid prescribed. Following day improvement, but a few hours after physician had received this report infant had sudden difficult breathing and screamed if touched upon chest. Death before his arrival. No autopsy.

27. Dupont:[46] Girl of one year. Breast fed; house damp. No ophthalmia or other infection. Fever and swelling, hot and painful, of whole of back of hand and of metatarso-phalangeal joint of great toe. Swelling persisted. In twelve days symptoms subsided. On fifteenth day cerebral complications: coma, deviation of eyes to the right and choreic movements of limbs. Child succumbed in three days; no autopsy.

Of these 27 cases it will be noted that, in addition to four classed as doubtful, an element of uncertainty attaches to the cases of Stäger, seven months, and Guthrie, twelve days, old,

also Zhnkovski's and Abelman's patients, respectively two weeks and six days old, which may be regarded as instances of peliosis rheumatica.

This would leave 19 instances of acute articular rheumatism under one year which may fairly be regarded as genuine. It is of interest, also, that two (H. H. Kane's case at seven months, and Basch's, thirteen weeks old) had pericarditis during the course of the rheumatic affection, while two others (Flint's, one year, and Rotch's, two weeks, old) developed cardiac disease at a later period.

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345 SOUTH EIGHTEENTH STREET.

DISCUSSION.

DR. CRANDALL.—I did not understand what number of cases Dr. Miller regarded as positive. It has seemed to me that these attacks of actual articular rheumatism are somewhat more common in young children than is usually supposed. We know that the ordinary attack in children is subacute in character, but I have seen a number of acute attacks as characteristic as those seen in adults.

DR. MILLER.—I believe I found 19 authentic cases.

DR. JENNINGS.—One case of acute articular rheumatism in a child of seven months has come under my observation and terminated in death. It was only temporarily controlled by salicylates.

DR. KOPLIK.—Since the publication of the first case I ever had I have only seen two cases in my practice. The frequency of these cases or of any cases must vary according to the character of material, and therefore the statistics as to its frequency are very confusing, but I think I am safe in concluding from my own experience that this condition is exceedingly rare. The tests that Dr. Miller has laid down in his paper I believe are very well taken. The last case I saw was in a child of twelve months and the mother was a rheumatic subject.

DR. GRIFFITH.—I feel, also, that so far as my own experience goes that this disease is very uncommon. I have seen but one case in an infant. I want to express my appreciation of Dr. Miller's paper, for those who have written statistical papers know what a work it must have been to go over all the reported cases in order to determine whether they were really cases of acute articular rheumatism. A point that was particularly impressed upon me last year in going over the cases handed in for the scurvy investigation was that so many of them had been at first diagnosed as rheumatism.

DR. CRANDALL.—I have been impressed during the past year with the readiness with which the joint affections of scarlet fever may be mistaken for rheumatism. I have seen two cases in which the diagnosis of scarlet fever was doubtful, but the joint affection was very distinct, and in one case the diagnosis was not made with certainty until desquamation occurred. These joint affections occurring in the course of scarlet fever, I think, as a matter of fact, are not true rheumatism in most cases.

DR. COTTON.—I cannot help wondering how long before the time will come when we will stop talking about rheumatism. If there is anything that we have not any right to name distinctly and positively it is rheumatism; and as we have got rid of "bilious," "dropsy," etc., I think we are coming to the time when we will drop "rheumatism" and perhaps "neuralgia." We are now discussing it in a semi-scientific way, as if we really believed there were such a thing. I should like to see this Society make some effort to eliminate this term.

ON CHOREA.

A LETTER FROM GEO. MONTAGUE SWIFT, M.D.,

Attending Physician to St. Mary's Free Hospital for Children, New York.

DEAR MR. EDITOR:—Your remarks on chorea in the July number of the ARCHIVES have led me to write out my impressions of that disease, gained from observation of the cases in St. Mary's Free Hospital for Children during the last thirteen years. Our cases number about thirty each year. The idea at the beginning of my service, gained from lectures and reading, was that chorea was a disease somehow allied to rheumatism, just how no one knew, was frequently associated with an endocardial murmur, and was quite readily recovered from, if the patient was kept in bed a few weeks and given arsenic in sufficiently large and increasing doses.

After a time I found myself wondering why, if chorea was a rheumatic ailment, no one used any ordinary rheumatic treatment for it: why we should be warned that other children should be kept away from the subjects of chorea lest they also acquire the disease from imitation, which was said to be quite common. Why was it that these cases seemed to get well after remaining in the hospital for a few weeks, even without treatment? Especially was this true of the cases occurring in the summer time, when they were immediately sent to the home on Rockaway Beach, where a few days in the damp sea air was sufficient to apparently cure the most active case. This seemed strange, if the cause of the trouble was the rheumatic poison, for usually sea air is not sought by rheumatic subjects. Then, too, while it has not been unusual to see cases of rheumatic poisoning in private practice, chorea has been comparatively rare. I find that gradually my impressions have become formulated, and that my interpretation of the ailment is somewhat thus: In many children, especially in those of the tenement class (from whence largely our hospital cases are drawn), there is an inherited neurotic disposition; the control nerve centres are weaker and lose their strength, and fail to exercise their function when any condition arises that interferes with nutrition in such children.

The normal condition of the muscular system of every child is activity; when the, at best, weakly exerted control nervous

centre is imperfectly nourished and so rendered useless, naturally the muscular system becomes abnormally active, the movements being less restrained, or inco-ordinated, and we see what we call chorea. The condition is exactly analogous to what happens in the young adult, when, the emotional nature becoming predominant, a similar weakness of the intellectual or will nerve control centres permits the condition called hysteria. In almost any individual, after prolonged or severe muscular exertion, causing a condition of exhaustion, one sees temporarily upon attempted fresh effort the same erratic, inco-ordinated muscular movements as those which characterize chorea. It is a condition of exhausted nerve control.

The association of chorea and rheumatism, too universally noted to be lightly thrown aside, seems to me by such a theory to be readily explained. Few poisons give rise to greater anæmia than does the rheumatic poison. I use anæmia not only in the sense of a low hemoglobin content, but in the sense of the popular term "impoverishment of the blood." As a result of the rheumatic poison, there is a failure in the nutrition of the nerve cells regulating and balancing muscular movements, and in this way, in certain individuals of neurotic tendency, rheumatism becomes the causative factor of chorea. Overcome this blood condition, restore the nutrition of the nerve cells, and the condition is cured. This has been done very commonly by arsenic, because, as we all come to recognize, arsenic is one of our best blood tonics. One can readily understand why sometimes there is present an endocardial murmur, and sometimes—oftenest—not. It depends on the severity of the rheumatic poisoning, upon the membrane affected by it, upon the care and protection the subject of it may get. The endocarditis has nothing to do with the chorea, except as it is indicative of the intensity of the rheumatic poison.

Looking at chorea from this standpoint, it seems easy to understand why, in the spring, after a child, improperly and insufficiently fed and rested, has been fretted or tired by study in a close, badly-ventilated room, its nervous system should begin to show signs of failure, especially if the anæmia of an attack of rheumatism be added. One would expect the failure to be first apparent in the most active system of the child, and so, sure enough, we find such evidence in the failure of the nervous control of the muscular system. The fact that many of

these children have other indications of exhaustion of their nerve cells strengthens the argument. It is quite common that the chorea child also has what are called "tantrums," or is an inveterate nail-biter, or has some other so-called nervous trick. If the condition is promptly recognized, and the subject is put to bed, kept quiet, and abundantly fed, it quickly recovers. This experience is repeated over and over again at St. Mary's; given the same conditions, the same individual goes through the same experience year after year, until gradually it is no longer the muscular system that principally shows the faulty nerve nutrition, but some other. Usually the intellectual or will power is weakened, and we have loss of control over the emotions. The so-called post-hemiplegic chorea of still later life is due to failure in nutrition of the cells of the cerebrum, and is explicable in the same way.

In our hospital cases I should say—not having the statistics at hand—that the large majority are school cases; the children are thin, pale, badly fed—what is called "run down." These children invariably recover after a few weeks' stay in the hospital, where the food is abundant, simple, and nutritious, and the discipline kind and firm, and the ventilation excellent. It is a modified rest cure. If it is a season of the year when the summer home is open (now situated on high ground near South Norwalk, Conn.), the recovery is more speedy. The second most frequent class of cases is that associated with rheumatism. These cases also most commonly get well, the endocardial murmur, when present, in some of them apparently disappearing. In some, however, it is long before the rheumatic poison loses its activity. When this does occur, and the anæmia is overcome, the child gradually regains its muscular control. If the disease of the heart be permanent and the anæmia recurs, the chorea is also apt to recur. These are, of course, bad cases, and occasionally one is fatal.

In another class of cases the failure of nutrition is due to the action of some other poison on the blood; it may be the malarial organism, and, of course, the indication for treatment is somewhat different. The great indication, I am convinced, in the treatment of all cases of chorea is to improve the blood condition; by doing this we shall enable our patient to recover the proper nervous control.

20 WEST FIFTY-FIFTH STREET.

Clinical Memoranda.

SEQUEL TO CASE OF SPONTANEOUS RECURRENT DISLOCATION OF KNEE JOINT.

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In the April number of the ARCHIVES OF PEDIATRICS I recorded a case of spontaneous dislocation outwards of the right knee joint in an infant eleven months old. The child, a boy, could slip his knee out and in by simple pressure of one leg upon the other, the dislocation being accompanied by a slight click. It was also possible easily to cause the displacement of the joint structures by seizing the leg and pressing the head of the tibia outwards.

The sequel of the case is interesting. The child is now sixteen months old and is walking quite well. There is no longer any tendency for the dislocation of the knee to take place; the boy does not dislocate it by the manœuvre above described, neither is it possible by moderate pressure on the joint to cause the displacement. The cure has been gradual, it being noticed that the dislocation took place with less and less frequency; and the retention apparatus which was being used was quickly abandoned as no longer necessary. The mother of the child, it may be noted, has since died of pulmonary tuberculosis. The child, however, shows no sign of disease, and is strong and well nourished.

The case reported by Dr. P. B. Barbour (ARCHIVES OF PEDIATRICS, January, 1899,) differed from the one described by me in that in the former the dislocation was bilateral, was in an outward and backward direction, and required considerable force (causing great pain) when produced by manipulation; in my observation the dislocation was unilateral, was directed outwards, and could be easily produced without apparently giving the patient any pain at all. The sex is not stated in Dr. Barbour's case; in mine it was male.

In a search throughout medical literature I have been rewarded by finding only one other case at all resembling these two, and even in it the resemblance was far from complete. It is

that reported by Julius Wolff ("Ueber einen Fall von 'willkürlicher' angeborener präfemoraler Kniegelenksluxation nebst anderweitigen angeborenen Anomalieen fast sämmtlicher Gelenke des Korpers." *Ztschr. f. orthop. Chir.*, ii., 23, 1893). In this case the patient, a girl of nine and a half years, suffered from fixed congenital dislocations of both hip joints and of the left knee joint, from movable congenital dislocations of both elbow joints, and from subluxations of the shoulder, ankle, wrist, interphalangeal, and sterno-clavicular joints. In addition to these numerous anomalies she also possessed the power of voluntarily dislocating and returning again the right knee joint, the dislocation being a prefemoral displacement of the tibia. In the right knee, and indeed in all the joints, there was a marked laxity of the capsular and ligamentous structures; the lower end of the right femur and the upper end of the right tibia seemed to be normal, as did also the patella. In the permanently dislocated left knee the patella, however, was rudimentary.

Possibly, also, the case of Charles H. Warren, referred to by G. H. B. Macleod (*Glasgow Med. Jour.* xvii., 343, 1882), and others may be looked upon as having features in common with those just dealt with. It was that of a man, thirty-four years of age, strong, healthy, and athletic, who professed "to dislocate most of his joints at will and to restore the bones to their proper relationship by a voluntary act." Macleod states that only in the case of the hip joint was there any complete dislocation, but he admits that Warren could cause without pain a displacement of the articulating surfaces in the lower jaw, shoulder, wrist, fingers, hip, *knee*, and ankle. "The bones of the wrist, knee, and ankle could not be displaced without the application of the hand, and they only admitted of partial lateral dislocation. There was no power of dislocating the extended knee, but when the joint was bent, and the foot held with the opposite hand, he could rotate the tibia easily so as to project the external condyle in front with a sharp click, and to such an extent as involved dislocation of the semilunar cartilage." It will be remembered that it was precisely in the position of extension of the knee that the dislocation could be produced in the case reported by me. The case of Warren was interesting also in the fact that it was claimed that not only his father but two of his own children possessed the same power

of voluntarily causing dislocations of various joints; a circumstance strongly in favor of the antenatal origin of the peculiarity.

Cases of spontaneous dislocation of other joints than the knee have been put on record (*e.g.*, "Case of Voluntary Dislocation of the Hip and Jaw." By J. A. Adams, *Glasgow Med. Journ.*, xviii., 254, 1882); but even these are curiosities, and it may be fairly concluded that spontaneous dislocation of the knee joint is one of the rarest of known malformations. Of course I exclude the cases of evident and advanced diseases of the knee, and I also leave out of consideration the instances of congenital fixed dislocation of the knee from rudimentary development or absence of the patella and from obvious deformities of the articular surfaces of the femur and tibia.* So far it must be admitted that congenital laxity of the capsular and ligamentous structures of the knee joint seems to be the only explanation of recurring, voluntarily induced dislocations of that articulation.

24 MELVILLE STREET, EDINBURGH.

Pathogenesis of Furunculosis in Nurslings.—Friedjung (*Archiv f. Kinderheilkunde*) has examined bacteriologically 9 cases of furunculosis in nurslings, which presented themselves under three varieties: 1. Subepidermic abscess. 2. Furuncles, properly so-called. 3. Abscess of the subcutaneous tissue developing almost without imflammatory reaction. In these 9 cases, from which 14 cultures of pus were made, the author found the staphylococcus aureus 10 times, 3 times the same organism associated with a small number of staphylococci albi, and once the latter organism alone. He therefore concludes that the furunculosis of nurslings is a staphylococcic infection of the skin. As to clinical varieties he states that in each case in which there was subepidermic abscess there had previously existed a superficial lesion of the skin (varicella, miliaria, eczema, syphilides). On the other hand, previous lesion of the skin was absent in all the cases in which there was furuncle, properly so-called, or abscesses developing without reaction.—*American Journal of Medical Sciences.*

* R. W. Lovett has collected from literature fifty-two instances of congenital dislocation of the knee. Keating's *Cyclopædia of the Diseases of Children.* Vol. v. (supplement), p. 994. 1890.

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

SEPTEMBER, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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THE ANTI-VACCINATION FOLLY.

The anti-vaccination craze has broken out afresh in various parts of this country. Anti-vaccinationists have shown unusual vigor during the past two or three years in England, and have secured the enactment of a law by Parliament, which it was supposed would practically abolish compulsory vaccination. The results of the law, strange to say, have on the whole been quite different from those expected. Though advantage has been taken in many cases of the so-called conscience clause, more vaccinating has been done in England since the law went into operation than ever before. This is believed to be due to the attention which has been called to the subject by the anti-vaccination agitation. It speaks volumes for the good sense of the English people.

The *Journal of the American Medical Association* calls attention to the fact that the necessarily local character of legislation in the United States will prevent its taking on a national importance as in England. "The anti-vaccinationists," it says, "are as virulent and unscrupulous as they can be anywhere, as is shown by the following quotation from an Indiana paper, taken from an anti-vaccination circular: 'The Board of Health advise all to be vaccinated, but they fail to tell what vaccination is. The reason they do not tell is because they dare not. Vaccina-

tion is the inoculation of a healthy person with the putrid pus from a festering sore—of a syphilitic nature—on a diseased animal.' It is not a credit to any community that statements like the above should be circulated and receive credence among its members, but there will always be some everywhere possessed of the qualities against which even the gods strive in vain."

The subject of vaccination was reviewed very thoroughly in the issue of the ARCHIVES for September, 1896. Small-pox was in former times essentially a disease of childhood, a fact scarcely known at the present day. One hundred years ago, 80 per cent. of all cases occurred in children under five years, while a large proportion of all the remaining cases occurred between five and ten years. It is one of the strongest proofs of the efficacy of vaccination that these conditions are now wholly changed.

In that number we made a very thorough study of small-pox before vaccination, the history of vaccination, and numerous other details regarding the subject. We came to the conclusion which the vast majority of rational and intelligent physicians have reached, namely: that Jenner's claims for vaccination, which were always positive, were judicious and by no means extravagant. His own words were: "Duly and efficiently performed, it will protect the constitution from subsequent attacks of small-pox as much as that disease itself will. I never expected that it would do more, and it will not, I believe, do less."

A few modifications in methods and minor details have been necessary since Jenner's time, but their number is surprisingly small. The lesson, it seems to us, to be derived from a century of experience is almost too plain to require formulating: Vaccinate in infancy and again in later childhood (at ten or twelve years).

Another lesson taught by the century's experience is almost equally strong: Permissive vaccination is not sufficient; com-

pulsory vaccination and revaccination are necessary to fully protect the public.

Physicians should be the last of all men to place obstacles in the way of compulsory laws and their enforcement.

DIPHTHERIA BACILLI IN PURULENT CORYZAS OF CHILDREN.

In a recent number of the *Archives de Medecine des Infants*, Grenet and Lesné report fifteen cases of purulent coryza without the presence of false membrane which were studied by them in children ranging from fifteen days to two years of age. Four of the babies had hereditary syphilis, one was a convalescent from scarlet fever, and several had gastro-enteritis. A bacillus resembling the diphtheria bacillus was found; and in seven of the cases the organism proved fatal to guinea-pigs, while with four of these virulent forms it was possible to produce pseudo-membranes upon the vulva of guinea-pigs or the ear of rabbits.

Clinically these cases did not resemble the classical picture of diphtheritic coryza, there being neither membrane, glandular enlargement nor oculo-palpebral involvement. In one case, however, scarlet fever developed one week after the diphtheria bacilli had been found in the nasal discharge, and diphtheria of the tonsils followed. This clearly shows that some importance must be attached to the bacteriological findings in cases of muco-purulent coryza. It is also advisable to isolate the cases as a prophylactic measure for others.

FURUNCULOSIS.

The occurrence of boils is not rare during infancy and childhood, but true furunculosis is uncommon. By this term is meant the occurrence of furuncles or small boils in great numbers. They occur by dozens or by scores or even hundreds. The condition is much more common in infants than in chil-

dren. In infancy it is seen in quite a different aspect than in adult life. A "core," which is regarded as one of the characteristics of a boil, does not often form, but the lesion assumes more of the type of an ordinary abscess. The contents is usually a soft yellowish or brownish pus without a hard substance or core. The abscesses are rapid in development, but one crop appears after another, so that the disease may continue for weeks.

The usual site of the boils is the head, neck and shoulders. They occur separately but are frequently so close as to coalesce as they increase in size, and at times to form a large cavity. Occasionally when they are very numerous, they so destroy the vitality of the parts that sloughing or actual gangrene occurs.

The disease is usually not serious, for most children survive the ordeal, but occasionally a weak marasmic child succumbs to the long drain upon its vitality.

As pointed out by Escherich the disease is due to the enterance into the hair follicles of pyogenic germs, usually the staphylococcus pyogenes aureus.

The discovery of the true cause of the disease renders the indications for treatment more clear. Prevention of reinfection by the pus is the most important element in the management, but is very difficult to accomplish. About the neck and shoulders the parts become so much swollen as to leave deep furrows and recesses into which the pus enters and readily infects new areas. The general plan of treatment consists in the greatest possible surgical cleanliness.

Each boil should be incised as soon as it points. The contents should be squeezed out gently and the cavity washed with a solution of bi-chloride of mercury or boracic acid. A saturated solution of boracic acid is one of the best solutions for use upon the surface, as it is not irritating to the sensitive and inflamed skin like the stronger antiseptics. In our own experience, the use of collodion, or dry and fixed dressings, about the neck and shoulders has been less satisfactory than have light

dressings which could be readily changed. Absorbent cotton held by a loose bandage or handkerchief so that the nurse can change it frequently and keep the parts cleansed has proved far more satisfactory.

THE MENTALLY FEEBLE.

The education of mentally feeble children has occupied the best energies of some of the foremost educators of our generation. They have reduced it to something like a science and it has taken its place among the special branches of pedagogy, by the side of the education of the deaf and the blind. Mentally feeble children have been found to improve more rapidly and to be far more happy in institutions established for them than in their homes. In fact, it has been found almost impossible to benefit them to any great degree in the family. There are two reasons for this. However conscientiously the mother or other relative having charge of the child may strive to teach him, yet amid the various interruptions of daily life it becomes almost impossible to give him the constant attention which is essential to success. The second drawback is the fact that contact with normal children proves a great discouragement to the feeble one who is only too often a laughing stock among them. In an institution where he is associated with others of his own calibre, this feeling of chagrin is replaced by one of emulation. His self respect is bolstered up and he finds himself happy in performing the simple exercises and tasks required of his class and is not discouraged by having his shortcomings constantly forced on his consciousness.

The mentally feeble vary in degree of deficiency as much as normal children vary in degree of efficiency. There is no definite line dividing the two classes—the competent from the incompetent. It often happens that in the feeble-minded one faculty will be remarkably developed. More commonly the affections and love of music are the strongest faculties of these unfortunates. The problem set the teacher is how to appeal to

these faculties in such a way as to awaken into activity the dormant powers, both mental and moral; to recognize their earliest motion and encourage with wise sympathy. The solution of that problem is worthy of the highest ability, for the successful training of such children demands not only patience and experience but teaching capacity of the highest type.

The results of training must vary largely in different children. The brightest of them in after years will mingle freely with the world and hold their own. Most of them can be taught manual arts by which they may be self-supporting. The weakest of them all can be made capable of caring for their own personal needs. Their improvement depends not so much on their apparent ability as upon their power to concentrate their attention upon any subject, showing that they differ from their more fortunate brothers and sisters not so much in kind as in degree of mental power.

CHILDREN'S HOURS OF SLEEP.

One of our contemporaries, whose name has unfortunately been lost, has some most judicious words upon a very fruitful source of illness in children—the custom adopted by many parents of allowing them to stay up unduly late at night. It calls attention to the fact that it is one of the greatest errors of those who have the care of children to let them have too little sleep. It is confessedly a difficult matter always to get little ones to bed at the time they ought to go. They plead for only a little longer to stay up; but if parents could realize the extreme importance of plenty of rest they would remain obdurate to all such entreaties.

It should not be forgotten that children are naturally wakeful in the morning, even when allowed to be up late at night. In consequence of having to be off to school betimes they are frequently called before they have finished their morning nap. Children, as a rule, ought to sleep ten or eleven hours, and to

do this they ought to be put to bed early enough at night so that they may have this amount of uninterrupted sleep. If children do not get the necessary amount of rest they infallibly become nervous, fretful, and difficult to manage. Their nerves, inherited in many cases from nervous parents, are keenly alive to every irritating influence and nothing renders them more so than insufficient sleep.

Barlow's Disease and Rickets.—Ausset (*La méd. moderne*) in a paper read before the Hospital Medical Society of Paris, reiterates his views, published some years ago, that Barlow's disease is but an unusual form of rickets (rachitis hemorrhagica). The syndrome of Barlow's disease is found only in the rachitic, and the bones in which hematoma occur also present evidences of rickets. In discussing Ausset's paper, Nette dwelt upon the essentially scorbutic nature of Barlow's disease, and the readiness with which it recovers under the antiscorbutic regimen. The disease has also been shown to prevail where rickets is uncommon, as in America.—*Medical Review of Reviews.*

A Diagnostic Sign in the Initial Stage of Measles.—Finkelstein (*Berl. Klin. Woch.*,) has met with 5 cases in Heubner's clinic, in which he found the peculiar rash on the mucous membrane of the cheek and lips described by Koplik, of New York. The condition has considerable diagnostic importance, as it is usually seen before the rash on the skin appears, and when the catarrhal symptoms are but slight. The rash consists of bluish-white papules situated on a faintly-reddish background; it may be scattered about the buccal cavity, or may be limited to one or two spots. The presence of this rash in the mouth is important in the differential diagnosis between measles and influenza, and also other febrile conditions found in children. The condition cannot be mistaken for aphthous disease of the mouth.—*British Medical Journal.*

Society Reports.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, June 13, 1899.

E. E. Graham, M.D., President.

A CASE OF RUMINATION.

Dr. L. C. Peter presented a boy nine years of age of marked nervous temperament, and a neurotic family history, who acquired the habit of rumination when seven years old. At first the food returned only upon voluntary effort, but at the time of his appearance at the hospital the food regurgitated without effort on the boy's part. He rechewed and swallowed it for several minutes after eating or until the presence of free hydrochloric acid rendered the food sour. Recovery followed tonic, sedative and suggestive treatment. Conclusions:

1. Rumination in children is a stomach neurosis associated with idiocy, or, as in adults, with a profoundly neurasthenic condition.
2. It is under the control of the will.
3. Prognosis, except in idiocy, is good.

A CASE OF MUSCULAR-PSEUDO-HYPERTROPHY.

Dr. Peter also presented a boy of seven years suffering from muscular-pseudo-hppertrophy. The muscles of the thighs and calves were much enlarged. Some of the shoulder group, arm and forearm muscles were atrophied. His gait was waddling and his manner of rising from the floor when placed upon his back was characteristically "climbing up his own legs." The case was the only one which had occurred in the family.

URTICARIA PIGMENTOSA.

Dr. Albert Woldert by invitation presented a case of urticaria pigmentosa following chicken-pox. The patient was a boy eleven months of age, born of English parents. When three months of age the patient had a well marked case of varicella lasting about two weeks. At that time the disease was prevalent in the immediate neighborhood. One week after the rash of chicken-pox had disappeared the mother observed some reddish blotches or wheels on the anterior surface of the chest. Four days later a similar circumscribed area appeared on the

abdomen, three days later upon the thighs, and finally, upon the anterior surfaces of both legs. Within three or four days after its occurrence upon the legs, spots were found on the back of the neck, and later upon the entire dorsal region of chest and thighs.

In all the involved areas after the rash had existed for about one week, the color changed to a light brownish, salmon, or fawn color, and after a period of eight months may be observed at this time. The eruption may be described as existing in the form of maculo-papules which are both discrete and confluent. Itching is not a marked symptom in this case.

A CASE OF INFANTILE SCORBUTUS.

DR. CHARLES F. STRETCH reported a case of scurvy in a child of thirteen months that had good hygienic surroundings. The family history was good on both sides. The child had had cholera infantum last summer, but made a perfect recovery.

At birth the child was placed on condensed milk given as frequently as the child desired. During the fourth month on this mixture, vomiting and purging occurred and the child was placed on Mellin's food for the next five months. Vomiting and purging then appeared and Horlick's malted milk was used and agreed for three months, when slight vomiting and purging resulted. At this time the first symptoms of the present disease appeared, consisting in profuse sweating, soon followed by soreness and swelling of the left leg, which was quite painful on flexion and extension. The child also gave a cry of pain when any portion of the body was touched. In a short time pain on passive motion appeared in the right leg. The child was now brought to the Surgical Department of the Children's Hospital, where the leg was put in continuous extension. This treatment was kept up for two weeks without improvement when it became evident that the child was not suffering from hip disease. The child was now referred to the medical side, and Dr. Griffith diagnosed it infantile scurvy. There was enlargement of the costo-chondral articulations, and distinct enlargement of the epiphyses at the wrist joints. There was no spinal curvature or curvature of any of the long bones, no muscular rigidity and no bleeding of the gums. In the past three days distinct petechiæ had developed over the instep of both feet just above the toes.

The treatment consisted in small amounts of beef juce, orange juice, and milk and water, 1-3. Ten days later the con-

dition of the child was much improved. He was still sweating continually and had some fever at night, and the stools had contained curds, but the ecchymoses were fast disappearing. The pain was less and the legs seemed much more movable. Nine days later the pain had entirely disappeared from the legs, but he did not use them much. The bowels had become constipated. Four days later the child continued to improve. There was no return of the petechiæ; the legs were freely movable and pain was entirely absent.

Dr. Jopson.—I saw this child when it was first brought to the hospital. It was brought to the surgical dispensary with the idea that it had sustained an injury, there being a history of a fall a day or two before. There was slight rigidity of the left hip and apparent pain on motion, and no other local or general symptoms at that time. I made a diagnosis of hip disease which was a tentative one, and was the only one I could make at that examination, and immobilized the hip by means of a pasteboard splint. It was apparent after ten days that something else was the cause of the trouble and at this time attention was directed to the opposite leg, which now seemed to be the seat of the pain and tenderness. There were also a few petechiæ on the foot. The idea of scurvy then occurred to me, and I asked Dr. Griffith to see the case and he concurred in the diagnosis. I think the case illustrates the multiformity of symptoms which infantile scurvy may present, and the necessity of being on the alert in cases of this nature. I know of one case in which the child had a swelling on the tibia which was diagnosed as osteo-sarcoma and amputation advised. The parents of the child brought it to Philadelphia and put it under the care of a doctor who diagnosed it as scurvy. Under anti-scorbutic treatment the child recovered and the extremity was saved. I do not see how the diagnosis of scurvy could have been made at first in this case on account of the localization of the pain without the involvement of other joints, and the absence of other stigmata of scurvy.

Dr. Allen.—I have had some experience with scorbutus in my own family. My eight months' old baby was carefully fed on dried extract of malt with cream, milk and lime water. I had raised one baby on that mixture with no ill effects. The baby had a great deal of pain on movement of the legs. Small doses of salicylate were given but he seemed to get worse.

Subsequently I noticed hemorrhage from the gums. Dr. Griffith diagnosed it as a case of scurvy. The diet was changed and orange juice given. In two or three days the pain disappeared. The child made a rapid recovery.

DR. J. P. CROZER GRIFFITH.—There are several interesting points which this case calls up. Although the scurvy has completely disappeared, the child still has sweating, and apparently fever at night. This indicates clearly the distinction between scurvy and rickets. There are many who consider them intimately connected, and who apply the name "scurvy-rickets" to the disease as seen in infants. After a careful study of the published reports of over 300 cases, my own conclusions clearly are that they are entirely different affections. Statistics clearly show many cases of scurvy devoid of any symptoms of rickets. Since both are probably dietetic diseases, there would seem to be no good reason why they should not both occur in the same case.

Another interesting point is that there was no affection whatever of the gums in the case of the child reported. This is so commonly viewed as an almost necessary symptom that numerous mistakes in diagnosis occur as a result of its absence or late development. The statistics of the American Pediatric Society prove that a very large number of cases begin with an affection of the lower extremities, producing a very characteristic condition of affairs, yet with no alteration of the gums as yet. I have been particularly impressed by the painful pseudo-paralysis which causes of scurvy exhibit. In two cases seen within a month of each other during the past winter, the most striking feature was the way in which the legs hung helpless, almost like a child with poliomyelitis, yet with the added symptom of pain on the least attempt to handle them. One case appeared to be the exact duplicate of the other. In each case the physician in attendance had suspected the presence of rheumatism. In each, however, the gums were decidedly involved, and the diagnosis was easy. In the case reported tonight there was no involvement of the gums, yet the condition of the legs was characteristic.

The italicized statement is made in Dr. Ballou's recent article on "Scurvy" in the supplement to the *Cyclopædia of the Diseases of Children*, that when the teeth have not appeared there is no characteristic affection of the gums. There are un-

doubted exceptions to this rule, as the investigations of the American Pediatric Society show.

Dr. Teller.—I think that scurvy depends upon the low percentage of proteids. I know a child that was raised on a modified milk from the Walker-Gordon laboratory in which the percentage of porteids was very low, this being necessitated by the condition of the gastro-intestinal tract. Scurvy developed in that child. The milk was pasteurized and of course prepared with the care always used in the laboratory. In another case, which I reported to the Pediatric Section of the A. M. A., the condition was brought about by one of the dried foods, malted milk. A physician diagnosed it rickets with spinal curvature. The child was put on whole milk with some added cream. Intestinal and gastric symptoms appeared and the child was placed under my care. I diagnosed scurvy and placed the child on modified milk. It soon got well. I think there are cases that develop when the children are getting a low percentage of proteids and are not dependent necessarily on sterilization; nor are the dried foods responsible, as Dr. Allen seems to think from the observation of his case.

A CASE OF HENOCH'S PURPURA.

Dr. T. H. P. Twaddell reported a case of Henoch's purpura in a child six years of age.

Family History.—There was tuberculosis on the father's side and a brother is now ill with phthisis. The child had measles and pertussis.

On the night of May 27th she was given a bath under the hydrant. On the following afternoon she complained of pain in the ankles, the muscles of the calf, the knees, the quadriceps muscle and the tendons of the popliteal space. She began to vomit on the 29th and had vomited ever since. Examination of the heart disclosed a faint systolic murmur at the pulmonary cartilage. Liver and spleen not enlarged. The abdomen was not distended, but was tender on pressure. From the knees to the feet there was a profuse purpura-like eruption, with slight œdema along the tibia, but more marked in the flexure of the knee.

May 31st it was reported that she had had fever the previous evening. She had had three stools the day previous. There was no blood in them, but several ounces of blood were

seen that morning in the stools which were accompanied by pain, mucus and tenesmus. She had continued to vomit. The abdominal tenderness was more marked right in the iliac fossæ. Spleen not noticeably enlarged. She had blood in the stools until June 2d. On the 3d there was no blood or mucus. She complained of pain in the right knee and was unable to walk. Her appetite was good. She had no fever and no blood came from the bowel. The purpuric spots had disappeared.

The diagnosis was based on the occurrence in a young child of hemorrhage into the subcutaneous tissues and from the bowel, associated with abdominal pain, vomiting, diarrhœa and pains in the joints.

Dr. J. P. Crozer Griffith.—I asked Dr. Twaddell to report this case because it illustrates the well-known way in which forms of purpura shade into each other. This case is one in which one hesitates whether or not to make a diagnosis of Henoch's purpura. The question was whether the discharge of blood from the bowel was accidental or not, and whether we had to deal with an instance of purpura rheumatica merely. A careful study of the case makes me regard it as a mild case of Henoch's purpura.

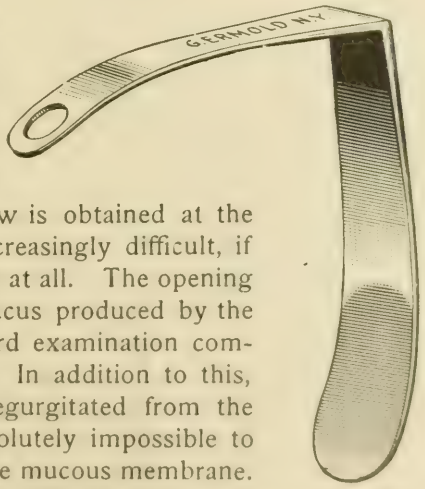
Dr. Allen.—I saw a case two or three years ago where there was hemorrhage from the bowel, under the skin, from the nose, mouth and bladder, as well as uncontrollable vomiting. The child was about eleven or twelve years of age, with an exceedingly bad tubercular family history. Since that time a sister has died of tuberculosis. The question of diagnosis at that time was between typhoid fever and purpura on account of the gastro-intestinal symptoms. The abdomen was scaphoid and the temperature was never high. The case ran a course of about eleven days, the child finally dying from exhaustion from profuse hemorrhages. There was always some uncertainty in my mind as to whether I had a case of Henoch's purpura, or one of typhoid fever with hemorrhagic tendency. I did not try the Widal test, and have always been sorry that I did not get the child to the hospital, where more could have been learned of the condition.

Current Literature.

MEDICINE.

Chapin, Henry Dwight: Pharyngitis and Tonsillitis in Infants. (*Medical News.* 1899. Vol. lxxiv., No. 9.)

It has seemed to the author that many attacks of fever and illness in infants are due to a catarrhal inflammation of the throat, and that such attacks are not infrequently attributed to some other cause. The principal reason for such a possible error lies in the difficulty in getting a satisfactory view of the fauces. This is especially true in very young infants. The tongue is high and the soft palate and pillars of the fauces low down, so that it is extremely difficult to get a clear view of the parts.



DR. CHAPIN'S TONGUE DEPRESSOR

Unless a satisfactory view is obtained at the first attempt it becomes increasingly difficult, if not impossible, to see clearly at all. The opening is so small that a little mucus produced by the irritation of a second or third examination completely obstructs the view. In addition to this, some milk is apt to be regurgitated from the stomach, and then it is absolutely impossible to see the real condition of the mucous membrane.

The author has had such difficulty at times in satisfactorily examining the throat in young infants that he has devised a tongue depressor for this purpose. Most of the tongue depressors in use are not only too large, but do not have the proper slant for the infant's tongue. As a result, the back of the tongue, not being properly held, arches up and obstructs a view of the fauces. The depressor here presented is small enough for the youngest infant's mouth, and is intended to curve over the tongue to the base of the epiglottis. By exercising a little pressure downward and forward the parts will come into clear view.

The infant should be properly held and placed before a good light. When everything is in readiness the left hand is used to steady the head while the right hand manipulates the depressor.

These details will naturally suggest themselves to the careful physician, but are often overlooked, with the result of unduly fretting the infant and failing in the examination.

In infants tonsillitis, as distinct from pharyngitis, is rare. The whole mucous membrane of the pharynx and tonsils is involved in the catarrhal inflammation. The tonsils may be somewhat enlarged and are covered with very fine pin-head points of a whitish exudation. These points can be recognized only when the fauces are well exposed in a good light. In rare instances the uvula is swelled and infiltrated. The secondary forms of pharyngitis seen in most infective diseases will not be here considered. The primary form is apt to be overlooked from the absence of symptoms referable to the throat, and the inability of the infant to call attention to the affected part. The swelling of the lymph glands of the neck so often noted in diphtheria and scarlatina is not usually present in primary pharyngitis. The two most common predisposing causes of primary throat inflammation in infants are (1) disordered stomach and (2) exposure to cold.

The frequent mistakes in the feeding of infants, especially overfeeding, produce an acid fermentation in the stomach. By direct continuity the mucous membrane of the pharynx and mouth may become irritated and inflamed. When the latter happens, the temperature keeps up instead of subsiding, when the stomach is relieved of its contents by vomiting or by their passage into the bowel.

Exposure to cold is likewise a common predisposing cause. Many infants, especially among the poor, are too warmly clad, especially about the neck and chest. As a result the skin is constantly moist. Such infants live and sleep in overheated rooms. In these cases an ordinary exposure to the cold air of draughts will induce throat inflammation.

It will be noticed that the causes here given are mentioned as *predisposing*. Most, if not all, forms of tonsillar and pharyngeal inflammation are due to the presence of microbes. In health and under good hygienic conditions the mucous membrane of the throat may not be unfavorably affected by microbes, but under depressing conditions, particularly when the digestive tract is in an irritated condition, the throats of infants are vulnerable. It is quite possible that many impurities may likewise find their way to the mouth and throat by means of dirty fingers,

or objects which are given to infants as toys, and which quickly find their way to the mouth.

The treatment consists in removing the cause, whether it be a deranged stomach, defective action of the skin, or faulty hygienic surroundings. The recurrence of attacks of pharyngitis in infants is the most common cause of post-nasal catarrh in children. The repeated irritation induced by these attacks causes hypertrophy of the adenoid tissue at the vault of the pharynx, which is the invariable accompaniment of catarrh in the later years of childhood. Frequent irrigation of the nostrils with normal salt solution, or boracic-acid solution, should be employed in all cases in which there is a tendency toward pharyngitis in infants.

To sum up, in order to successfully examine the throat of an infant the parts must be satisfactorily seen at the first examination. By means of the tongue depressor here presented the base of the epiglottis is firmly held at the first attempt and the fauces exposed to view. Pharyngitis and tonsillitis are more common in infants than has been supposed, and are a fruitful cause not only of present discomfort but of post-nasal catarrh in children. Repeated attacks will surely cause enlargement of the adenoid tissue at the vault of the pharynx as well as of the faucial tonsils.

Thomson, John, and Welsh, D.A.: A Case of General Paralysis of the Insane in a Child. (*British Medical Journal.* 1899. No. 1996.)

The patient was between ten-and-one-half and eleven years of age when she was first recognized as having symptoms of mental disease; and she died at the end of her seventeenth year. She was the second of seven children. The first, third, fifth and sixth children, who are all alive, have shown distinct signs of congenital syphilis.

When she was between ten-and-one-half and eleven years of age it was observed that she was not improving in her school work, and seemed to be getting stupid and irritable at home. No further change was noted in her mental condition until she was about twelve, when fits set in, and she became steadily less intelligent. Her speech was characteristically affected by the time she was twelve-and-one-half years of age, and her knee-jerks were greatly exaggerated when she was thirteen

years of age. When about fourteen years of age she had several distinct hallucinations. Between eleven and fourteen years of age she became unnaturally fat, but afterwards she steadily emaciated. The fits continued at varying intervals during her whole life. Six months before her death she had an attack of subacute periostitis over the right tibia, which was greatly relieved by iodide of potash. She died in a state of extreme debility of mind and body, aged sixteen years and eleven months.

The first convulsion occurred at the beginning of the thirteenth year. There was an interval of between ten and twelve weeks between each of the first five seizures. The attacks resembled one another in character, but there was more movement in some than in others. Later they were less frequent, but rather more severe in their symptoms. When she was about fifteen years old the attacks became more frequent, but they were only occasionally severe in character. Most of them consisted merely in short periods of unconsciousness, in which she fell backwards if not supported. The seizures rather increased in severity during the last six months of her life, and one side (sometimes the right and sometimes the left) was often noticed to be weak for some days after one of them. On one occasion a temporary squint was seen, and on another there was twitching of one upper eyelid.

MENTAL SYMPTOMS.—When ten years old the patient was thought by her parents and teachers to be of ordinary mental capacity. At school she was in the Third Standard, along with girls of her own age, and at home she was very docile, amiable and helpful. Towards the end of her eleventh year she was noticed to be getting gradually stupid, both in her school-work and at home. When she was eleven-and-one-half she was still able, however, to take the younger children out to play, and to sweep the floor and otherwise help in household work. A year later she was quite unable to do any work except to go a simple errand. At this time, if allowed, she spent all her day playing with beads, talking to herself at the same time, and she got so absorbed in this occupation that she would get up with the daylight to begin it, and seemed to grudge the time for her meals. She was also very irritable with the younger children, and would beat them if they touched her beads. Her memory for certain things was long retained. At twelve-and-one-half she could still repeat those parts of the multiplication table that

she had learned, although she was quite unable to do very simple sums. At thirteen she still remembered hymns which she had been taught long before, but her mental powers rapidly deteriorated after this time. Within a few days of her death she seemed to recognize old friends, although she appeared to take little notice of surrounding things. When about thirteen years of age she would constantly imagine that there was some one at the house door, when there was not, and would run to open it. She also insisted that some of her beads had got inside her pillow, and wanted to have it cut open to find them. When between thirteen and fourteen years of age she had various hallucinations. She often said she saw an elephant at one corner of her bed, and sometimes she pointed to what she thought were men in an empty room. . . . As the disease progressed the hallucinations became less distinct, but when between fourteen and sixteen she used to talk for hours to the pictures on the walls as if they were people.

THE COURSE OF THE DISEASE was a steadily downward one. There was always an aggravation of the symptoms for some time after each fit or set of fits, and a slight degree of improvement was sometimes noticed at first, if a long period were passed without any seizures. On the whole, however, there was never any real improvement.

Variot and Chicotob: A Case of Multiple Amputations of the Fingers and Toes. (*Journal de Clinique et de Thérapeutique Infantiles.* Vol. vi., No 49.)

A little boy two and a half years old came under observation for a mild bronchitis. His family history was good; he had been born at term, and presented no other congenital malformation except those of his fingers and toes, as follows: on the left hand, a constriction on the first phalanx of the index finger, and of the middle one; on the right hand, complete amputation of the last phalanx of the ring finger, and a furrow on the middle and index fingers causing some deformity. On the left leg there was a depression just above the ankle, and the second and third toes had their phalanges replaced by a small fleshy bud, while the fifth toe was badly formed and lay beneath the fourth. There was syndactyly between the first and second toes on the right foot, with absence of the last phalanges; also complete syndactyly between the third and fourth toes.

Radiographic study of the hands and feet showed that the constrictions did not involve the bones, and gave an excellent picture of the condition of the phalanges. This method is in fact, equivalent to a living dissection. The part played by constricting amniotic bridles in the production of these congenital malformations seems to be indisputable.

Rousseau: Blennorrhagic Peritonitis in Little Girls. (*Journ. de Clin. et de Thérap. Infantiles.* Vol. vii., No. 4.)

This rare complication of gonorrhœa is caused by a spreading of the infection along the mucous membranes of the vagina, uterus, and tubes, to the peritoneum. Clinically it may appear as an acute general peritonitis, mild or severe; or as a localized process, or as a chronic one, which runs a latent course. The prognosis is always serious, and most grave in the severe generalized cases. Even if recovery takes place, there may be obliteration of the Fallopian tubes and consequent sterility. The treatment should be prophylactic in treating the vulvo-vaginitis energetically; but when the peritonitis has developed, medical treatment is indicated if the pulse is good, and surgical treatment if the pulse becomes too frequent. The earlier a laparotomy is done the greater will be the chances of success.

Variot: Asystole in a Boy of Thirteen Years. (*Journal de Clinique et de Thérapeutique Infantiles.* Vol. vi., No. 39.)

The boy had a good family history, and had been ill six months, having had an attack of rheumatism two years before. Upon examining him there was found to be marked œdema of both feet and ankles; much dyspnœa; a small, feeble, but regular pulse; a pericardial friction sound at the base and a systolic murmur at the apex; in the left chest were signs of hydrothorax and pulmonary congestion; the urine contained no albumin. Death occurred thirty-six hours later, the dyspnœa having been greatly increased.

At the autopsy an old pericarditis was found, with great thickening and firm adhesions between the visceral and parietal layers, especially over the left ventricle anteriorly. The heart was dilated, the myocardium congested in the left ventricle, anæmic in the right. The aortic valves were thickened and the orifice very small; the mitral valves were also thickened and hard. The liver was fatty and congested; the kidneys congested and in the left one there was an infarction.

The asystole was undoubtedly due to the inflammatory condition of the pericardium, which interfered with the nutrition of the myocardium, and caused its adynamic condition.

Bourneville et Boyer: Alcoholism in Childhood; Mental Instability; Moral Imbecility. (*Archives de Neurologie.* Vol. vii., No. 37.)

The patient was a boy of thirteen, whose father was nervous, and whose brother had died of meningitis. On the mother's side nothing could be discovered in the family history. He was well until the age of four, when convulsions appeared and were followed by lowering of the intelligence. At twelve he began to smoke to excess, and to drink, especially beer and cider. His attacks of anger were terrible; he had hysterical attacks, and talked of suicide frequently. Mental work of any kind became more and more impossible, and he was placed in a medico-pedagogic institute. At first he was greatly excited, refused to eat, and exhibited melancholia tendencies. Gradually he improved, under the influence of the isolation, the withdrawal of tobacco and alcohol, and the medico-pedagogic régime, until after nine months he was taken home again. One year later he was still perfectly well, at work, and showed no tendency toward alcoholism.

These cases are not very rare in children, and can usually be cured with ease if treated energetically and isolated.

Smith, C. W.: Health of Children. (*The Cleveland Medical Gazette.* 1899. Vol. xiv., No. 5.)

In an editorial to be found in the *Medical Age* for December 27, 1898, "The Health of Boys," the author begins by saying that "an English physician who has made a physical examination of 100 boys in a public school, has created a mild consternation in the minds of many educationalists by his strange report. Of these 100 boys, who were from thirteen to fifteen years of age, 39 were below the average height, 53 below the average weight, 68 below the average in chest measurement, 63 were the subjects of deformities, 2 were ruptured, 14 had varicocele, and 22 were the subjects of albuminuria. It seems difficult to believe such a report. The Englishman, as he is familiar to us, is not lacking in vigor and usually sizes up extremely well when his physical stamina is contrasted with the standard of other nations. His taste for athletics and outdoor

sports and pastimes is supposed to have saved him from the relaxing vices which have promoted physical degeneracy among feebler nationalities, and yet these 100 boys are found for the most part to be a rickety lot, which in some savage communities would have been left to perish among the unfit, or in Greece or Sparta might have been weeded out by some system of selection quicker in its action than natural selection can ever be."

Let us inquire, what would be the results of a like searching examination into the health statistics of our own home schools of America. One thing is quite evident! The results would be unsatisfactory, and would point to the necessity for reforms, to be brought about by no little effort, education and public expense.

It would be discouraging, indeed, if nothing could be done for the betterment of poor children, who like King Richard III. have been "brought into this breathing world scarce half made up," and we rejoice to say that the "milk of human kindness" has reached many of the poorer classes in our large cities, and has mitigated to some extent the unenviable surroundings with which they are environed. Many a home has been made more cheerful and healthful by the influences which have come to it from without. The "fresh air camp" and day nursery, the "day in the country" now provided for by charity are a God-send which brings hope and a limited supply of vigor for the days which follow. These blessings, however, are not enjoyed by many.

Opposed to these refreshing moments we have the basement school, the crowded quarters of those above-ground; the two-roomed cottages, homes of parents with four of more children, and, most common of all, the small sleeping apartments never properly ventilated. A number of little ones suffer from enlarged tonsils and hypertrophic adenoid growths which materially impede the respiration and add a suffocating influence to their already poor environments.

Defective vision is also a vast source of depression to the nervous child, who notwithstanding all drawbacks and handicaps is expected to pass through the machinery of our public schools at the same velocity as the one favored by birth with a robust and healthy constitution.

Children under such unhygienic influences are apt to become rachitic, pale, and weak. The first to suffer from glandu-

lar troubles, curvature of the spine, chicken breast, bowel disorders and consumption.

The unhealthy child must pass through life as best he can, and unaided he is apt to find it more of a curse than a blessing. Pain, with agony of body and mind, is likely to attend his struggle for existence.

At the recent meeting of the American Public Health Association, Mrs. Helen H. Richards, of the Institute of Technology, Boston, contributed a paper on "The Urgent Need of Sanitary Education in the Public Schools." "It is most apparent," she said, "that the average American citizen has not accepted the teaching of sanitary science as a part of his creed. The remedy for this ignorance is to be found in securing the correct teaching of the elements of public hygiene in the public schools of the country. The first essential for teaching the elements of sanitary science in the public school is a schoolhouse in which every principle given is not illustrated by a violation of such teaching."

Baginsky, A.: Pericarditis in Children. (*Klin-therap. Wochensch.* 1898. *International Medical Magazine.* 1899. Vol. viii., No. 3.)

The author supports Henoch's statement that this disease is more common in children than in adults. At the "Kaiser and Kaiserina Friedrich Kinderkrankenhaus," the latter authority observed 64 cases (24 were accompanied by polyarthritis, 11 were tuberculous, 11 had pneumonia [7 with erysipelas, 6 with empyema], 5 had grave diarrhœa, 6 measles with pneumonia, 3 had endocarditis. Meningitis, purulent otitis media, and diphtheria, completed the list). Serous, fibrinous, hemorrhagic and purulent forms of this disease may be distinguished in children. The serous variety, irrespective of etiology, is usually ushered in with severe symptoms: high fever, great pain, active, rapid respirations, violent cough sometimes, and a countenance expressive of great suffering.

The temperature is irregular, the pulse varies in strength and fulness, and does not furnish us with positive evidence regarding the condition of the heart. The heart of the young child, supported as it is by the large liver of infancy, lies more horizontally than the adult organ; hence, the displacement of the cardiac viscus and the "triangular" outline of cardiac dulness may not appear. The dulness does extend to the

right of the sternum, however, though such extension does not enable us to distinguish this affection from cardiac dilatation. Auscultation furnishes the most important evidence, for "pericardial friction" is nearly always heard at the "base." The loud, blowing, endocardial sound (Rosenbach) may be heard as the effusion subsides.

The purulent exudate is harder to diagnose, as the amount of pus is usually small. It accompanies grave constitutional conditions, such as erysipelas, pneumonia, empyema, etc. The bacterium coli, streptococci, staphylococci, or the bacillus pyocaneus, may be found in the pus. The tuberculous variety is rare and constitutes a very malignant form.

In pericarditis accompanying rheumatism, the heart muscle is often, though not always, affected. The earliest sign here is the enlargement of the cardiac dulness. Next come friction noises which may last for a while and gradually wear away. The heart does not always regain its former size. The fibrinous form, with early adhesions, is the frequent variety which accompanies rheumatism. A second attack of rheumatism may repeat this picture; or, evincing dyspnœa, enormous enlargement of the cardiac area, hepatic enlargement, dilation of the cervical veins, and a venous pulse, the child may succumb.

The author regards the salicylates as useless in this disease. He lauds digitalis and diuretin. The latter drug may yield astonishing results. Under certain conditions, strophanthus may supplant digitalis.

Zimmermann, G.: The Etiology of Pseudo-croup. (*Münch. Med. Wochenschrift.* 1898. No. 29. *American Journal of Medical Sciences.* 1899. Vol. cxvii., No. 3.)

The author holds that false croup may be a symptom of adenoid vegetations in the pharynx. His attention was called to this by the examination of a patient, a girl of eighteen, in whom the symptoms disappeared on scraping out the growths. In sixteen other cases the suspicion was confirmed, although a careful examination was made in only eleven. Three were examined within half to two hours after an attack. In eight cases the vegetations were the only abnormalities present. In two there was laryngitis, in one rhinitis.

The author's explanation of the mechanism is that mucus passes down the larynx, especially during rest in bed, and then

causes spasmodic adduction of the false vocal cords, as in pencilling the larynx. A cough, which has a barking character on account of the position of the false vocal cords, frees the opening, but only temporarily. When the cough stops the larynx is closed again, before a deep breath can be taken, and so the symptoms of asphyxia are produced, and it is only in consequence of relaxation of the false cords from CO_2 poisoning that the respiration again becomes free. The subchordal swelling noted by some authors, and assumed to be the cause of the paroxysm, is secondary to the changes described, and is ascribed by Zimmermann to *hyperæmia ex vacuo.* In all cases removal of the vegetations was followed by recovery.

Immunity of Infants to Measles.—Jurgenssen (*Deutsches Archiv f. Klin. Med.,*) asserts that very young infants are "immune," and cites a recent series of observations of 41 exposed to measles. All over six months contracted the disease, while the 25 under five months were not affected.—*Journal of the Association.*

Albuminuric Retinitis in a Child.—Dr. Arnold Lawson and Dr. G. A. Sutherland report the following case: A girl, aged twelve, was exhibited before the Society last year with advanced albuminuric retinitis in both eyes and symptoms of chronic interstitial nephritis. Two weeks after she was shown she had uræmic convulsions and absolute blindness which lasted some days. During the next few months she had headache and vomiting but no more uræmia. In September she was readmitted to the hospital for cardiac failure; death followed. The whole duration of the illness had been a year and three-quarters. *Post-mortem* both kidneys were found to be granular; the heart was hypertrophied, and there was a cerebral hemorrhage into both ventricles. In the retina exudation of the usual type was found at the central region. Congenital syphilis was suggested as a cause. Mr. Holmes Spicer had under his care a female, aged about twenty, who had interstitial keratitis in both eyes a few years ago and other evidence of congenital syphilis. In the last few months she had developed very marked sclerosis of her retinal arteries which presented the typical gold-wire appearance; she had retinal hemorrhages and flocculent masses of retinal exudation. There was also albuminuria.—*Medical and Surgical Review of Reviews.*

THE WILLIAM F. JENKS MEMORIAL PRIZE.

The Fifth Triennial Prize of Five Hundred Dollars, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on

"The Various Manifestations of Lithæmia in Infancy and Childhood, with the Etiology and Treatment."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children"; and that "the Trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

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Original Communications.

URTICARIA OF THE MUCOUS MEMBRANES, ESPECIALLY IN CONNECTION WITH ASTHMA.*

BY FREDERICK A. PACKARD, M.D.,
Philadelphia.

Our knowledge of urticaria is as yet by no means complete, but it can be said that at least most of its phenomena are due to vaso-motor irregularities. In exactly what way various excitants of the condition act we by no means know, all that can be said being that after the ingestion of certain articles of food usually harmless, after the taking of certain drugs, after the administration of certain serums as prophylactic or curative measures, and after contact with certain substances there occurs in susceptible persons, or in others for the time being in some sensitive condition, a train of phenomena showing its chief manifestations in the skin.

That these phenomena are chiefly vascular is shown by the local appearances, by the rapidity of the formation of the wheals, their equally rapid subsidence, and the complete absence of residual sign of their presence. The true and characteristic elements of the skin can hardly be considered as taking part in the lesions save in a purely subsidiary manner. The immediate cause of the appearance of the wheals is still unexplainable, nor do we know whether the curious local appearances are the result of an attempt at elimination of morbid material or not. If the latter is the explanation the attempt is more clumsy and inefficient than is usual in nature, the excretory organs of the skin seeming to be entirely inactive. If it is not an attempt at elimination we must look upon the wheal as the result of a vaso-motor paresis, a view that is strongly supported by the effects of ordinary irritants and especially by the phenomena of dermographism and factitious urticaria.

* Read before the American Pediatric Society, Deer Park, June 27, 1899.

There is no very evident reason for the fact that in the vast majority of cases the causes of urticaria produce lesions on the external rather than upon the internal surfaces of the body except for the existence of more constant irritation of the exterior than of the interior surface.

If the mucous membranes are affected physically as is the skin we would expect to get sudden swelling, possibly shifting about, with a sense of irritation corresponding to the itching sensation of external urticaria.

My object in reporting these cases is not to call attention to any new clinical fact, but to suggest the possible frequency of this condition of internal urticaria as an explanation of certain cases otherwise difficult to understand; such, for instance, as the so-called "stomach cough," and "sore throat of indigestion."

Before proceeding with an account of the cases that have more particularly called my attention to this subject, I wish to briefly refer to what seems to me a rather interesting observation. As a boy I had a friend who at one time would almost invariably break out with a startling crop of hives upon the occasion of his crossing a certain bridge spanning the Schuylkill River. This I myself witnessed repeatedly. Some years later I met a man who also suffered in crossing the same bridge, but in his case his discomfort came from difficulty in breathing. Whether this was merely a coincidence, and whether these symptoms were due to the aroma from the neighboring gas-works, or to lime-dust that was apt to pervade the atmosphere at that place, I do not know.

During the past winter I had under my care a boy, aged eleven years, because of two attacks of bronchitis, to which he was subject. Just after the last of these attacks he went to the Hot Springs of Virginia for a short time. While there he had an attack of indigestion of considerable severity. Partly because of this he was brought home and I was asked to see him upon his return, on the morning of January 6th. I found that he had had two vomiting attacks upon the preceding day, but was otherwise merely suffering from slight malaise and loss of appetite. His temperature was normal, pulse quiet, his chest perfectly clear from any abnormal sign, but his tongue thickly coated with a white fur. I restricted his diet and gave him small doses of calomel and soda.

That evening I was hurriedly summoned to see him at eleven o'clock. I learned that he had been quite comfortable through the day but had vomited once in the evening. He went to bed at eight o'clock, his temperature being at that time 100.6°. Suddenly he began to cough violently and to be much oppressed in his breathing. This continued with varying severity until shortly before I was sent for, when his oppression became decidedly more severe. I found him with flushed face, slightly dusky lips, and rapid respiration. The chest was rather hyper-resonant at all parts and full of sibilant and sonorous râles. His temperature was 101.4°. I was rather puzzled by this sudden and unprecedented attack of dyspnœa, but the explanation was clear upon my morning visit, for I then learned that at three o'clock in the morning he suddenly complained of severe itching over various parts of the body, and at the same time the cough and dyspnœa abruptly stopped. His breathing through the early morning was unnatural but manifestly from nasal obstruction, which came on earlier in the night with frequent sneezing but no secretion. When I saw him in the morning his face was swollen from a free crop of hives, the lips being much affected. Scattered over the whole surface of the scalp, trunk, and extremities were many typical wheals. The tongue was less coated than on the preceding day, the temperature was 99.4°, and the chest absolutely normal. I saw him again in the afternoon and found that the hives had been very troublesome during the whole morning, but that at 3.30 P.M., the itching quickly diminished, while at the same time his dry cough and sense of oppression in the chest had returned, but not to so great an extent as before.

When I saw him again at 6 P.M., he had quite a large number of hives over his surface, including a huge wheal involving the prepuce. The mucous membrane of the mouth and pharynx were of a vivid but blotchy red color and much swollen. Throughout the chest there were many piping dry râles. His temperature had risen to 100.6°. During that night he had a bad spell of coughing with dyspnœa lasting from 11.30 P.M. to a little after 1 A.M., when he went to sleep to awake at 4.30 A.M. with intense itching of the skin. At 10.30 A.M. another severe coughing spell began and lasted for an hour and a half with diminution of the itching during that period. When I saw him at a little after noon he was breathing quietly but was

much bothered by the urticaria of the skin. The temperature was normal and the chest negative except for a few piping râles over the position of the large bronchi. From this time there was no return of the cough or oppression, the case running the ordinary course of a severe acute attack of urticaria. The only relief given to this cough and oppression was that obtained by the use of a steam atomizer with lime water.

By a curious coincidence I saw a similar but less severe case on the afternoon of the day after the attack began in the case above narrated. On January 7th I was asked to go out to Overbrook to see a little boy aged eight years whom I had frequently attended for chronic gastro-enteritis. He had been taken sick during the night of January 4th with a croupy cough without fever or pain on swallowing. This returned on the night of January 5th. On January 6th his mother looked at his throat and found that his tonsils were swollen. On the morning of January 7th his temperature was 101°, and he had much paroxysmal cough. I saw him that afternoon and found him with a temperature of 100.6°, a thickly plastered tongue and some swelling of the tonsils. His chest was entirely free from abnormal sounds.

On the next day the paroxysmal cough continued but examination of the chest revealed no cause for it. On the morning of the 9th, at about 10 o'clock, a crop of raised, round, white spots appeared first on the face but soon spreading over the body and accompanied by intense itching and swelling, redness and burning of the ears. At the same time the cough notably diminished and did not bother him until the rash disappeared in about an hour, when it again became troublesome.

I saw him in the early afternoon, at which time there was no trace of the rash except for one small typical (although not itching) wheal on one eyelid. The tongue was still heavily coated, the tonsils still large and very red, the chest entirely normal on physical examination. From this time there was no further discomfort except for the outcropping of urticaria upon the skin and nasal mucous membranes for a couple of days.

In both of these cases, but especially in the one first related, the alternation between the skin eruption and the trouble with the air-passages was very striking, and their mutual relationship left no doubt in my mind that the cough in both cases and the physical signs in the first were due to the same process

occurring in the air-passages as was at other times visible on the skin.

A far less striking case, and yet one that possibly illustrates the same condition, was that of a nurse at the Philadelphia Hospital whom I saw last winter in two severe attacks of what appeared to be ordinary spasmodic asthma. To these she had been subject from childhood. During her childhood she also had frequent attacks of hives. This coincidence would have but little interest in this connection save for the fact that her attacks when I saw her had been produced by, or at least shortly followed, the eating of oysters, while a previous attack of asthma she remembered having followed in a half hour after eating fish.

Urticaria involving the lips is so frequent as hardly to deserve mention, but in the case of a girl aged thirteen, whom I first saw in the latter part of 1894, and later on many occasions, there have been repeated attacks of urticaria (giant form) involving one or both lips with constant involvement of the mucous membrane of the tongue, cheeks, gums, and throat. After the complete subsidence of all visible manifestations she, after one of these attacks, had continuous hoarseness and sense of deep obstruction to swallowing, persisting for several days, and without any adequate explanation other than the occurrence of swelling of the mucous membrane of the larynx and œsophagus.

It is by no means impossible that some of the gastro-intestinal symptoms present with urticaria indicate not the persistence of the cause of the urticaria but the actual existence of urticaria of the mucous membranes of the stomach and bowel. In the literature many cases pointing to that view are to be found.

Involvement of the genito-urinary tract is apparently more rare than is that of other mucous membranes, yet in 1896 I had a case of what I believe to have been this condition in a man who had marked hæmaturia which ceased quite promptly as he became covered with a profuse crop of typical urticaria. He had previously had frequent attacks of hives, but never had had hæmaturia before this occasion.

There is no very evident reason why urticaria should not affect the mucous membranes as well as the skin, its relative infrequency being probably best explained by the irritation of the latter by the clothing and the unwarmed air.

Comparatively little is said in most text-books on skin diseases, and articles upon asthma regarding urticaria of the mucous membranes in general or that of the respiratory tract.

T. McCall Anderson ("A Treatise on Diseases of the Skin," 1887, p. 236) says: "In rare cases urticaria is accompanied by hemorrhage from the stomach, bowels, or urinary passages, probably owing to the mucous membranes being attacked by the eruption and rupture of the capillaries ensuing."

Moriz Kaposi (*Patholgie und Therapie der Hautkrankheiten*, 4th ed., 1893), says that urticaria at the same times as it involves the skin often shows itself in the mouth, throat, pharynx, and epiglottis.

Lasegue, in his "Traité des Angines" (1868, p. 134), devotes a section to guttural urticaria. He says that when the eruption of urticaria begins on the skin it rarely affects the throat, and that the latter is more often first affected when the urticaria is produced by the ingestion of harmful substances.

H. Radcliffe Crocker, in "Diseases of the Skin," speaks of involvement of the air-passages and stomach in cases of urticaria.

Ernst Schwimmer (v. Ziemssen's "Handbook of Diseases of the Skin," 1885, p. 378) says: "In rare cases urticaria also shows itself on the mucous membranes."

Duhring ("Cutaneous Medicine," Part II., p. 285) says: "The occurrence of urticaria upon the mucous membranes must be admitted. It takes the form of an œdema, usually diffuse. The first signs of urticaria in some instances, as is well known, are manifested in connection with the alimentary or the respiratory tract, as evidenced by symptoms of swelling, characterized by nausea and gastric and œsophageal crises, or a sense of suffocation, and other signs of distress. All such symptoms are peculiar in that they are usually sudden, evanescent, or ephemeral."

George Thomas Jackson ("The Ready Reference Handbook of Diseases of the Skin," 1896, p. 549) says: "The mucous membranes are often affected at the same time with the skin; and if the pharynx (*sic*) is attacked there may be suffocative symptoms."

One of the best articles upon urticaria of the mucous membranes is one by Noël Gueneau de Mussy, entitled "Considérations sur les Endermoses ou Affections Herpétiques Internes," *La France Médicale*, February 26, 1879, *et seq.*). I quote the following general statement: "In the mucous regions inacces-

sible to our sight, if the functional troubles of the organs which they carpet alternate with cutaneous affections, this is a strong presumption that they depend upon the pathogenetic condition which produces these affections; if they coincide with them, or if they succeed them, one could still recognize between these two morbid facts an affinity of nature and of origin, and one ought to consider this in the determination of therapeutic indications."

In 1889 M. Crouslé wrote his *Paris Thesis* upon internal urticaria, and has collected therein thirty-three cases, including nine previously unreported. In case eighteen (personally communicated to the author by Fernet), repeated causeless attacks of coryza were apparently closely connected with a later outbreak of urticaria, the latter being subsequently substituted by an attack of asthma.

The tongue may be swollen during an attack of acute external urticaria, as is shown by the cases of Freudenthal (*New York Medical Journal*, December 31, 1898), Jonathan Hutchinson (*Archives of Surgery*, Vol. i., p. 369, 1890), James Hamilton (*The Medical Press and Circular*, November 13, 1895). In the latter case the swelling was so great that incision of the tongue was required.

In Crouslé's fourth case the whole mucous membrane of the mouth and fauces became swollen during an attack of asthma, although no external manifestations of urticaria were present.

Albert Rosenberg (*Die Krankheiten der Mundhöhle, des Rachens und des Kehlkopfes*, 1899) says: "In urticaria there sometimes form wheals upon the mucous membrane of the mouth, throat and epiglottis."

An interesting case of isolated urticaria of the tongue has lately been carefully studied and reported by Goodale and Hewes (*Amer. Jour. Med. Sc.*, April, 1899).

G. Goltz (*Deutsche med. Wochenschrift*, April 24, 1880, p. 225), reports a case of sudden œdema of the velum palati, followed by a sudden attack of angio-neurotic œdema of the forearms.

Landon (*Berlin klin. Wochenschr.*, January 12, 1880, p. 23), records his personal experience with an attack of left-sided involvement of the pharynx shortly followed by angio-neurotic œdema of the extremities.

H. Gaudier (*L'Echo Médical du Nord*, August 8, 1897, p. 363), relates the case of a student of medicine who had eaten a large meal composed in great part of snails. He was waked two hours later by itching and dryness of the mouth, with the feeling of a foreign body in the throat. On feeling his own throat he touched his enlarged palate which he conceived to be a snail that had stuck to his throat and which he endeavored to remove When seen the mucous membrane of the cheeks, tongue, palate and fauces were intensely swollen, with some swelling of the epiglottis. In this case there was no external urticaria, but the nature of the mucous membrane lesions is decided by the cause of the attack and by their complete disappearance in twenty-four hours.

In the discussion of a paper by Laveran (*Bull. et Mém. de la Soc. Méd. des Hôp.*, 1891, T. viii., p. 346) upon a case of giant urticaria with involvement of the fauces, there were mentioned similar cases by Moutard-Martin, Rendu and Sevestre.

Joseph S. Gibb (*Philadelphia Polyclinic*, August 3, 1895) has reported a case of violent urticaria following free indulgence in strawberries. On the evening of the second day the external lesions became less troublesome, but hoarseness and difficulty in swallowing came on with increasing intensity. On the next day the patient was well.

The case related in *Preussische medicinal Zeitung* of August 20, 1862, is of much interest in connection with the explanation of those curious cases of hoarseness and "croup," following the taking of quinine, such as are occasionally encountered. It concerned a man with malaria who had taken twelve pills of quinine and at once complained of severe itching on the neck, chest, arms and legs, due to the eruption of transient wheals. On the next day the man had a sudden attack of suffocation with laryngeal stridor and aphonia, the urticaria of the skin being still in evidence. All the symptoms rapidly subsided under treatment by warm potash baths and chloroform inhalations.

A somewhat similar case is reported by I. H. King (*Philadelphia Medical Times*, March 1, 1879, p. 251). A woman, aged twenty-two years, had quotidian intermittent fever. She was given a mercurial cathartic and, on the next day, one dose of quinine. The latter was followed in two hours by the appearance of urticaria, great dyspnœa, precordial oppression. The

patient herself had been similarly affected upon a previous occasion, while her father and mother were said to have the same symptoms upon taking the drug.

A case of alarming œdema of the epiglottis or larynx, which diminished upon the outbreak of an urticarial rash upon the skin was reported by J. Madison Taylor in the *Philadelphia Med. Journal*, April 2, 1898, p. 607. The patient had had previous attacks of urticaria of the skin. Cases showing involvement of the larynx have also been reported by Frank Woodbury (*Philadelphia Polyclinic*, February 15, 1896, p. 61), by W. Allan Jamieson ("Diseases of the Skin," 1891, p. 134), and by A. Cayla (*Congrès International de Dermatologie et de Syphiligraphie*, Paris, 1889, p. 780).

A fatal case of angio-neurotic œdema of the larynx is mentioned by Osler (*American Journal of the Medical Sciences*, April, 1888), among a family wherein angio-neurotic œdema was hereditary.

The subject of the mutual relations of asthma and urticaria has received a considerable amount of attention, particularly since Sir Andrew Clark's article entitled "Some Observations on the Theory of Bronchial Asthma, Viewed in the Light of the Pathology of Hay Fever," which appeared in the *American Journal of the Medical Sciences*, of 1886, p. 104, and which was foreshadowed by a discussion in the *British Medical Journal* of 1880. After looking over the literature of the subject none can deny that the eruption of urticaria upon the bronchial mucous membrane is capable of producing attacks of "spasmodic asthma," and that the asthma of hay fever may have its origin in swelling of the mucous membrane, yet it is difficult to follow Sir Andrew Clark so far as to hold that bronchial spasm is not an important and frequent, nay the most frequent, cause of the difficulty of breathing in ordinary spasmodic asthma. In spite of Sir Andrew Clark's strong reasoning, the arguments advanced in support of the theory of bronchial spasm (especially as expounded by Hyde Salter in his work on "Asthma: Its Pathology and Treatment") must be held as valid in regard to the vast majority of asthmatic cases.

In his lectures on "Clinical Medicine" (Vol. ii.) Trousseau says that among the premonitory symptoms of urticaria, there are for some hours or days "general discomfort, headache, horripilation, rigors, precordial oppression, lipothymia, and

more or less difficulty in breathing, which is sometimes so great as to excite the fear that the patient will be suffocated." "It seems as if the morbific matter were formed in such quantity that the different emunctories are scarcely sufficient to eliminate, or that before finding its natural exit, which is by the skin, it goes round—pardon the figure—knocking at every door, thus affecting the nervous system, the organs of respiration, and the organs of digestion." "I have still to call your attention to a circumstance connected with the eruption which was pointed out by Koch, *viz.*: that it may become developed on the inside of the mouth. This observation leads me to ask, whether the chest symptoms of which I have spoken, are not occasioned by an eruption or congestive state of the mucous membrane of the bronchial tubes, analogous to the eruption and congestion seen on the skin. My opinion is that bronchial eruption may occur in urticaria, precisely as in measles." On p. 645 of Vol. i. he relates a case of an asthmatic woman whose attacks of asthma coincided with an eruption of urticaria, the oppression in breathing invariably increasing when the urticaria disappeared.

In 1896 there appeared the *Paris Thesis* by Jean Pierre Emile Delbrel, entitled "Contribution a l'étude de l' Urticaire des Voies Respiratories." His work is based upon twenty-five cases, twenty-three from the literature with two unpublished cases of Braquehaye. His first case occurred in an ataxic woman who was subject to attacks of urticaria upon eating strawberries or mussels. Suddenly after eating three or four fresh mussels she had an attack of suffocation with cough. (Twice previously she had had attacks of cough after eating mussels.) An eruption of urticaria soon appeared and at the same time the respiratory symptoms disappeared. On the next day she was well. His second case occurred in a dyspeptic man. He had an attack of bronchitis for which had been prescribed kermes mineral and syrup of poppy. Fifteen minutes later there occurred a sudden attack of suffocation with paroxysms of cough which lasted for three-quarters of an hour. One hour after the onset of the attack it suddenly ceased upon the appearance of an urticarial eruption. There was no evident cause other than the syrup of poppies. Delbrel's conclusions are that there is such a thing as urticaria of the respiratory mucous membrane, that the same causes may produce urticaria of the skin and of the

mucous membranes, that the eruption of urticaria often begins in the mouth and extends from that part, that bronchitis predisposes to the location of the eruption on the bronchi, that the suffocative attacks may be due in different cases to affection of the larynx, glottis or bronchi.

In the excellent article upon "Asthma," by James F. Goodhart, in *Clifford Allbutt's System of Medicine*, there is a discussion upon the associates of asthma in which there occurs the following sentence: "Another is urticaria, and it is not uninteresting to note that it is sometimes associated or replaces asthma, as a case of asthma produced by contact with cats will show. I have records of three such cases."

In J. L. Milton's article on "Giant Urticaria," in the *Edinburgh Medical Journal* for December, 1876, he relates a case of giant urticaria involving the skin first and later the mouth and throat, and a second that began with great difficulty in breathing, which subsided upon the appearance of wheals on the skin.

Crouslé relates in his *Paris Thesis* (above quoted) seven previously unpublished cases, and one, the original of which could not be obtained by me (Potain's case reported before the Association française pour l'avancement des Sciences, 1883,) where respiratory distress occurred in association with asthma. His first case occurred after the eating of mussels and was relieved at the same time as there occurred an urticaria of the skin. His second case concerned an old case of asthma in which, on one occasion, the disappearance of an eruption of urticaria was promptly followed by a dyspnœal attack. In his third case oppression of breathing occurred while the urticaria of the skin was still in force. In his fourth case attacks of asthma and urticaria replaced each other about twenty times. His fifth patient was suddenly attacked by extreme dyspnœa after eating Normandy sole and mussels. While mechanically stroking the patient's forearm, there was noticed an eruption upon that part. Friction to the whole body produced urticaria of the whole surface with rapid relief of the respiratory trouble. On a previous occasion a similar attack of dyspnœa had been relieved by the appearance of an external urticaria. The sixth case had had on two or three occasions urticaria with intense dyspnœa "like asthmatic attacks" after eating mussels, fish, lobster, etc. In his seventh personal case, sudden causeless attacks of coryza occurred and lasted for a day or two. Later repeated attacks of

urticaria of the skin occurred with oppression upon their disappearance; later still an attack of asthma without urticaria or coryza; and then constant emphysema with attacks of urticaria and asthma. Potain's case had no true asthmatic symptoms, but with an attack of purpuric urticaria there was present some dulness and feeble breathing on the right side posteriorly, with absence of diaphragmatic breathing.

In an interesting article in the *British Medical Journal* of November 21, 1885, upon "Asthma as Related to Diseases of the Skin," L. Duncan Bulkley furnishes some interesting facts. Among 4,300 cases of skin diseases of various kinds 37, or a little less than 1 per cent., had asthma. Of these 37 cases 5 had urticaria. Again, 68 cases of urticaria were seen in the group above mentioned, or, in other words, 7 per cent. of 68 cases of urticaria also had asthma.

In *Gazette Hebdomadaire* of February 18, 1881, there occurs in the abstract of the proceedings of the Societé de Thérapeutique reference by Gueneau de Mussy to a case of asthma following the disappearance of an urticaria; and, in the same discussion, Paul spoke of attacks of dry nervous asthma being possibly due to urticaria of the bronchi.

In the Lettsomian Lectures for 1879 (2d edition, 1885, p. 36), John C. Thorowgood reports the case of a physician who always had an eruption of urticaria whenever he had one of his attacks of catarrhal asthma.

Achille Bouyer (Considérations pratiques sur l'Asthme, p. 23), relates the case of a woman, aged forty-five years, asthmatic for many years, who had a generalized attack of urticaria, for the relief of which she took a cool bath. Two hours later she had an attack of asthma which lasted many hours, and grew less on the next day upon the appearance of a fresh crop of wheals.

Cayla (*Congrès International de Dermatologie et de Syphiligraphie*, Paris, 1889, p. 780), relates the case of a woman, aged sixty-five years, who was suffering from an attack of asthma occurring after having had a generalized urticaria for two days. The asthma came and went through the day, coinciding with violent itching and new wheals. Later gastro-intestinal symptoms occurred, as will be mentioned later.

In *Sitzungsberichte der Niederrheinischen Gesellschaft für Natur—und Heilkunde zu Bonn* (1881, p. 85), Ungar reports a

case of relapsing urticaria with well marked attacks of bronchial asthma. There had been no previous attack of either trouble and both seemed to be excited by going into the cold air and relieved by returning to a warm room. An interesting fact in this case was the occurrence of Charcot-Leyden crystals in the sputum.

Grancher (*Gaz. des Hôpitaux*, June 14, 1884, p. 546), reports a woman, aged nineteen years, who had had for some years a cough following an attack of subacute bronchitis. She had a sudden attack of painful suffocation with sibilant râles and pain in the left chest. Three days after the onset urticaria appeared with prompt subsidence of the respiratory symptoms. The urticaria continued for eight days. Fifteen days after this had ceased she had another suffocation attack with rise of temperature. On the next day the fever fell and a second crop of wheals appeared.

T. Davies Pryce (*Lancet*, May 22, 1886, p. 968), has reported the case of a boy, aged sixteen, upon whom an operation for phimosis had been performed. Two days later the penis was swollen and a poultice was applied. Shortly thereafter itching and tingling were present beneath the poultice. This soon spread to the whole body and an eruption of hives appeared. Simultaneously with the cutaneous eruption, or rather even with the irritation that preceded it, the patient experienced considerable difficulty in respiration, which increased in direct proportion to the amount of the urticarial rash. Hives and asthma persisted for nearly three hours and then disappeared together. Similar attacks recurred during the next two days. In connection with this case much interest attaches to one reported by George C. Kingsbury (*British Medical Journal*, February 7, 1885, p. 278). It concerned a woman, aged thirty-three years, who had a chronic leg ulcer. In spite of her protest that flaxseed poultices caused her to have asthma, such an application was made. Three hours later she had an attack of asthma which subsided upon removal of the poultice. She at the same time had an eruption of urticaria on the back, chest and arms, and a crop of herpes where the poultice had been applied. In Trousseau's "Clinical Medicine" linseed is given as one of the provocatives of asthma. (See note at end of article.)

In Bourdon's article upon "Intermittent Urticaria," in *L'Union Médicale* of November 22, 1866, p. 355, three cases

are related, in the last of which (a man who had never had urticaria), there occurred a sudden sense of heat and swelling of the face and neck accompanied by malaise and anxiety, with oppression to breathing and slight sibilus on expiration. Under the use of ether and sinapisms the malaise and anxiety slowly diminished, while urticaria manifested itself upon the trunk and limbs. Upon the application of cold for the relief of itching semi-syncope recurred, to cease on removal of the cold. On the next day the man was well.

Gilbert Martyn (*British Medical Journal*, June 8, 1895, p. 1265), narrates the case of a woman, aged forty-three, who ate about a dozen mussels for supper. An hour later she had sensations of choking with great difficulty in breathing. At the same time an outbreak of urticaria occurred. On admission to hospital she was cyanosed, with labored breathing, cold extremities, an urticarial rash over the whole body, and typical signs of asthma on auscultation.

In a discussion upon Laveran's paper upon urticaria of the throat, mentioned above, Labbé referred to two cases of asthma soon followed by urticaria.

Guéraud (*Gazette Hebdomadaire de Médecine et de Chirurgie*, July 1, 1881, p. 413), relates the case of a girl, aged nine years, who had had two previous attacks of bronchitis. Suddenly an attack of paroxysmal cough with dyspnœa and malaise appeared. On the next day the lips were violaceous, the respirations were rapid, and sibilant and sonorous râles were present over both lungs with moist râles at the bases and over the bronchi. During the latter part of the third day the dyspnœa ceased. Some bronchitis remained for a little time. Three weeks later a similar attack occurred with respiration rate of 85 and imminent asphyxia. Sibilant and sonorous râles were heard. On the second day of this attack the respirations fell to 40 and there were present moist and dry râles. Gradually through this day the condition improved. The rapid disappearance and the absence of fever rather negatived the existence of inflammatory trouble and congestion of the lungs was, in the reporter's opinion, ruled out by the absence of dulness and bloody expectoration. There was no sign of enlargement of the tracheo-bronchial glands. At almost precisely the same time next year successive eruptions of urticaria appeared. The connection between the attacks of respiratory trouble and the urticaria is not perfectly

convincing, but the case is mentioned, because the reporter was convinced of the association sufficiently to cause him to indicate it in his title.

A case referred to by Robert Willan ("On Cutaneous Diseases," 1809, p. 303), a man with repeated attacks of urticaria in one of which he had trouble with his breathing, may have been an instance of the association of these two conditions.

Sir Wm. Gull (*Guy's Hospital Reports*, 1859, Vol. v., p. 317), mentions in his article upon factitious urticaria, the case of a boy, aged fifteen years, presenting that curious phenomenon and also subject to asthmatic attacks.

V. Alibert (*Gazette Medico-Chirurgicale de Toulouse*, February 1, 1876, p. 27), reports the case of a man aged about thirty years, who had a severe attack of urticaria during the course of which, on two successive nights, there occurred severe attacks of asthma which disappeared after a hot foot-bath.

Mögling (*Berlin. klin. Wochenschr.*, September 27, 1880, p. 557), relates his own experience with urticaria of the skin, apparently preceded by involvement of the mucous membrane of the respiratory passages (burning feeling with cough).

The absorption of hydatid fluid is a well-known cause of urticaria. In this connection I would refer to a case related by Debove (*Bull. et Mem. de la Soc. Med. des Hôpitaux*, 1888), in which a crisis of dyspnœa accompanied urticaria after puncturing hydatid cysts.

Owing to the comparative frequency of urticaria after the injection of diphtheria antitoxin, I have been on the watch for any report of cases of asthma following that procedure. I have seen none, but in the *Lancet* of April 15, 1899, p. 1024, Fitzgerald and Ewart report a case of Malta fever in which urticaria followed the injection of Malta fever antitoxin. A repetition of the injection on the next day was followed by intense urticaria, swollen joints, quick breathing, cough and blood-tinged expectoration. "It seemed that he had a general urticaria, both externally and internally, causing exudation from the various serous membranes." The grave symptoms gradually subsided.

In the two cases coming under my own observation and in the thirty-four cases abstracted from literature the connection between the skin lesion and the respiratory symptoms is quite close. The order of the occurrence is not uniform, and, while in many cases, there seems to be a balancing between the cuta-

neous and respiratory lesions (as was the case quite markedly in my first two patients), yet the two systems are frequently involved at the same time.

A severe attack of pulmonary congestion followed the taking of a bath to relieve urticaria in the case of a boy under the care of Descroizilles (*Rev. mensuelle des Maladies de l'Enfance*, 1885, p. 257).

Octave Sinot relates (*ibid*, p. 218) the case of a child, aged thirty-two months, whom he was attending for bronchitis with disproportionate general symptoms. Upon the occurrence of urticaria on the skin the bronchitis disappeared.

Involvement of the œsophagus in the case of the thirteen-year-old girl spoken of among my own cases seemed quite probable from the sense of deep obstruction to swallowing that persisted after one of her attacks. Such involvement of the œsophagus seemed also to be present in the case of Jonathan Hutchinson's (referred to above), and in a case mentioned by Blachez (*Bull. et Mem. de la Soc. Méd. des Hôpitaux*, 1872, T. ix., 25, p. 270), wherein the swallowing of cold water by a woman with urticaria produced discomfort throughout the whole length of the œsophagus.

Rapin (*loc. cit.*) also reports a case of urticaria with apparent involvement of the œsophagus.

In dealing with urticaria of the gastro-intestinal tract it is necessary for us to be on our guard in order to keep separate the cause and the effect. As has been said by Dubreuille (*Gazette des Hôpitaux*, November 22, 1892), in many cases the digestive symptoms are not the effect but the cause of the urticaria, but that "the urticaria even of alimentary origin is not necessarily preceded by indigestion or intoxication."

Urticaria of the stomach is supposed by Crouslé to have produced the sense of gastric warmth that followed the eating of fish and preceded an outbreak of urticaria upon the following day, in one of the cases narrated in his Thesis. Willan (*loc. cit.*) states (p. 303) that "pain and sickness at the stomach are in general relieved when urticaria appears, but return when it disappears." Such relief was not produced in a case (1) described by Descroizilles, where violent vomiting and diarrhœa preceded and accompanied an eruption of urticaria caused by eating mussels.

De Mussy (*loc. cit.*) relates a case where violent colic without diarrhœa alternated with the appearance of urticaria upon the skin. He later mentions a few cases in which strawberries produced urticaria with vomiting and diarrhœa, the latter symptoms being regarded by him as an evidence of internal urticaria; and then another case with gastric crises ending in what he considers to have been urticaria of the vulva.

Lemonnier (*Annales de Dermatologie et de Syphiligraphie*, 1897. T. viii., p. 280) refers to the case of a man, aged fifty-six years, who had been attacked by chronic migrating giant urticaria about five years before coming under observation. Two years before he was seen he had had vomiting of blood without preceding acute pain in the stomach and without symptoms of dyspepsia. He attributes the hæmatemesis to urticaria of the stomach. That urticaria of the stomach may be one cause of hæmatemesis is shown by a case reported by J. J. Pringle (Transactions of Clinical Society of London, 1885, Vol. xviii., p. 143). It concerned a man, aged fifty-one years, who had recurring attacks of hæmatemesis with urticaria.

There are in the literature a few cases of urticaria involving the external genitals. Involvement of the internal urinary organs would seem to be infrequent. The dividing line between the various forms of angio-neuroses is difficult, and there may be no hard and fast line between the paroxysmal hæmoglobinuria of Raynaud's disease, with its external manifestations, and such a case as the last personal case that I reported. In Lichtheim's article upon "Periodic Hæmoglobinuria" (*Volkmann's Sammlung Klin. Vorträge*, whole number, 134, *innere Medicin*, No. 46) there is related the case of a man, aged forty-three, who had urticaria with the passage of dark red urine about once a month, and always produced by exposure to a low external temperature.

110 SOUTH EIGHTEENTH STREET.

NOTE.—After the reading of the above at the meeting of the American Pediatric Society Dr. F. Forchheimer handed me a brief note referring to the case of a women, aged 30, in whom the application of flax seed poultices produced first asthma, upon the cessation of this urticaria, which again was followed by purpura urticaus. Two years afterward, notwithstanding objections on the part of the patient, poultices were applied again and were followed by the same results except the purpura urticaus.

DISCUSSION.

DR. BLACKADER.—I do not know whether others have noticed that in conditions of chronic bronchitis in children an eruption sometimes appears on the skin and while it remains there seems to be a subsidence of the bronchitis.

DR. WENTWORTH.—I would like to ask about the connection between urticaria and hæmaturia, whether there were any references to it in literature.

DR. MILLER.—Dr. Packard does not speak of any purpuric signs, a condition which sometimes alternates with the eruption of the skin and intestinal colic. The condition is closely allied to the one he describes.

DR. DORNING.—I have not seen an urticaria of the mucous membrane of children, but I have in mind a few cases of adults. In one case, the patient was twenty-six years of age and had three attacks, each one coming on at the dinner table. On one occasion she had eaten grapes, and felt a swelling in the throat which was followed by the urticaria. When I saw her a few days later, I found a slight swelling of the fauces and the arytenoids. She used a saline gargle which gave considerable relief, but that night, notwithstanding large doses of salicylate of sodium, she developed large wheals on the body. Another case was that of a girl of about eighteen, who had urticaria, principally on the forearm, extending up at times to the face. She had one attack of strangling and, though I did not see her, she described it as a swelling in the throat and a choking sensation.

DR. PACKARD.—I found very little reference to hæmaturia in cases of urticaria. One of the best described is that of Lichtheim. In the vast majority of cases they seem to have been attacks of ordinary hives, which begun with symptoms of asthma, and promptly cleared up with the outbreak of hives on the skin.

Laryngeal Complications of Measles.—Fraenkel (*Revue mensuelle des Maladies de l' Enfance*) reported to the Société de Biologie de Hambourg four cases of measles terminating fatally with laryngitis, in which the autopsies showed ulceration of the vocal chords and of the arytenoid region of the larynx, in some portions involving the structures down to the perichondrium and even the cartilage itself. Had recovery taken place these lesions would have been followed by phonative or respiratory disturbances. These lesions are comparable to the laryngeal ulceration or necrosis observed in typhoid or typhus fevers.—*American Journal of the Medical Sciences.*

THE INCREASE OF WEIGHT IN INFANTS FED ARTIFICIALLY.*

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In presenting the results of my studies on the increase of weight of artificially or substitute fed infants, I waive the question as to the appropriate sterilization or pasteurization of the milk for future consideration. In this paper I will show the results of substitute feeding with one definite method of modification and preservation of the milk. General statements hitherto given as to the feasibility of methods of heating or modification of infant foods, their advantages and disadvantages, can no longer aid us. We have arrived at a pass when actual study and record of results only can be of value. It is not pretended that the method of modification or heating adopted in feeding these infants was the ideal one. The author of this paper doubts whether any of the methods now in vogue will remain ideal or unchanged in the future. The data of this paper are simply a definite insight into the well-being of a certain number of carefully observed and carefully fed infants.

During the past nine years I have conducted in connection with my Dispensary Clinic a laboratory for the artificial feeding of infants, well and sick. In this way a vast material has been constantly passing under my immediate observation. This material has been utilized as much as possible in such a material, for the study of many vexatious points in infant feeding. For the purposes of the present study infants below the age of nine months were observed and as many collected as would remain under observation for a protracted period. It was soon found that a very limited number could be successfully studied. Monthly inspections and weighings of a hundred infants means much labor, and mothers sometimes rebel against even the weighing of their infants. All infants were below the age of nine months. I have divided my studies as follows:

1. Infants fed from birth, or nearly so, with a modified cow's milk.

2. Infants fed with the breast and cow's milk.

* Read before the American Pediatric Society, Deer Park, June 27, 1899.

All milk was sterilized at 90-92° (Flügge, Koplik) and then rapidly cooled. The modified milk supplied to these infants of the first and second class was in all cases the same. It was composed of cow's milk diluted with equal parts of distilled water and 6 per cent. of sugar of milk recrystallized added, the so-called Heubner-Hofmann's mixture. Infants below three months receive three ounces of this mixture; above this age an ounce is added to every month until eight ounces are reached, when full whole milk is administered. The number of bottles given to each infant daily varies from seven to eight feedings. To new-born infants below one month the mothers were warned not to adminster the whole three ounces, only an ounce and a half at a feeding. The infants were systematically weighed. In this way infants received the following quantities:

			COW'S MILK.		DAILY QUANTITIES.
24 hours.	1.	7 bottles,	3 ounces		
	2.	"		21	mixture, 630
		8–9 "	3 "	24	750 to 720
	3.	8–9 "	"		750 to 720
	4.	8–9 "	"	32	990 to 960
	5.	7–8 "	"	40	1230 to 1200
	6.	7–8 "	"	42	1200 to 1260
	7.	7–8 "	"	49	1400 to 1370
	8–9.	7–8 "	"	48–56	1680

The Heubner-Hofmann consists of one part of milk, one part of a solution of sugar of milk, 60 g., to a litre of water. This mixture gives approximately the following composition:

Water,	90.57.
Albumen,	1.78.
Fat,	1.85.
Sugar,	5.44.
Ash,	.36.

This mixture is almost identical with that advocated by Soxhlet.

From the above it will be seen that the mixture is poor in fat, and is well diluted; being in use for the past five years I can say it meets the greatest average of cases. No lime water is added under any conditions.

In some of the older children who did not prosper on the Heubner-Hofmann mixture, I have supplied the deficit of fat as follows:

Fat mixture: To the above Heubner mixture we added from a 16 per cent. cream to each 100 parts, enough to bring the fat up to 4 per cent. These cases I include in this paper under a separate heading.

The endeavor has been made to supply a mixture of milk in which the dilution of albuminoids or casein was sufficient to insure its ready assimilation. Only one mixture was supplied to the cases first treated in this paper. This was the mixture mentioned.

We will recall some cardinal points in substitute feeding of infants with modern methods. As far as our absolute knowledge goes, based on the computations of nitrogen waste in the bowel, we cannot as yet say positively that the waste of nitrogen under sterilized milk or pasteurized milk are so apparent and divergent as to enable us to say at a glance that under a certain form of heating or preparation of the food the waste is palpably greater in one form of heated food than another (Bendix-Koplik).

We know that in artificially fed infants in whom cow's milk is used, that relatively larger quantities of milk must be exhibited to the healthy infant than would be necessary in the same infant if fed on mother's milk. This does not at all mean over-feeding with quantities greater than the known stomach capacity. (Cammerer). In sick infants, in fact, fed with cow's milk, the minimal quantities of Biedert have thus far given the best results. Under all conditions the waste under a cow's milk diet is vastly greater than under mother's milk. In fact, Knoepfelmacher has recently shown that a whole and nutritive element of the cow's milk goes through the gut indigested (paracasein and pseudo-nuclein). The phosphorus in cow's milk stools of infants, as showing the above waste, is 16 times as great as in stools of infants of the breast.

Last of all the increase in bodily weight in a substitute or artificially fed baby, cow's milk being used, is very irregular and may be made more so by varying the quantities and class of food exhibited. Cammerer shows first that the infants fed under old methods ten to twenty years ago were as a rule not so well nourished as the infants fed by the later methods of preparation, modification and sterilization. Of 59 tabulated cases by the later methods he finds the following increase of weight daily in grammes:

WEEKS.											
1–2	2–4	4–8	8–12	12–16	16–20	20–24	24–28	28–32	32–36	36–40	40–52
4	21	21	22	22	25	22	13	10	10	0	12

MONTHS.	WEIGHT.								
1	2	3	4	5	6	7	8	9	10
3810	4430	5090	5800	6550	7180	7650	8140	8000	8880

Of twenty-five children fed in rotation at my laboratory on the methods briefly outlined, I find that at the end of the ninth month the following average weights:

MONTHS.								
1	2	3	4	5	6	7	8	9
3735		5068	5285	5518	7088	7223	8680	9021

My material of accurate monthly weighings includes 30 cases in rotation, and we find the daily increase in these cases as follows:

WEEKS.							
4–8	8–12	12–16	16–20	20–24	24–28	28–32	32–36
32	17.4	23.6	18	14.2	11.8	15.6	15.1

Comparison shows a striking resemblance of figures of daily increase from average computation between the figures of Cammerer's weights and those in my own material. In breast fed infants the figures obtained by Ahlfeld and Cammerer show more regularity than in the cases of bottle fed infants.

	AHLFELD			(Breast).	CAMMERER (Bottle).	KOPLIK (Bottle).
1	18	15	—	31	21	32
2	27	30	37	26	22	17.4
3	27	15	17	24	22	23.6
4	37	29	16	21	25	18.
5	31	—	12	18	22	14.2
6	26			15	13	11.8
7	22			15	16	15.6
8				16	16	15.1
9				9	9	

Ahlfeld finds the figures of Bouchard a little high.

If now we compare the figures obtained in my clinic to those of Cammerer, we must grant that the results in the infants compared are very encouraging, and must lead us to the conclusion that the results in infant feeding where large numbers of infants are averaged and the same methods of general dilution and preparation are employed are much the same in all countries. The differences of daily increase are so slight that it must be that, granted our methods are modern, the discrepancies in some infants will be greater than others. In other words, some infants under great care and avoidance of everything which will tend to make the infant ill and depress the weight, will increase in weight, but not necessarily in such definite ratio as is the case with breast fed infants. Some infants will increase in weight, but in great strides, others by slow increments, but the exact percentage to the body weights is not maintained in arti-

ficially fed infants as in breast fed infants. In my material there were several things to be considered which will tend to depress the results. First the bad hygienic surroundings of the infants (which were all taken from an ambulatory service in the slums); secondly, the tendency of the infants, through some carelessness of the parents to become ill with diarrhœa or other diseases which either necessitated the suspension of milk diet or diminution of the amount of milk until the threatening symptoms had passed. In private practice I have had better results because the care bestowed upon the infants was greater, and the tendency on the part of the parents to experiment was absent. Thus one infant coming under observation at the second month weighing eight pounds, at the end of the ninth month weighed twenty-three and a half pounds. This infant had no illness to interrupt its increase of weight. It received the Heubner-Hofmann-Soxhlet mixture, yet it would not be just to expect that all infants would have such great weight at the end of nine months. Nor was this a case of overfeeding. It would thus seem that study of the average clinical material was rather a better insight into the possibilities of a mode of infant feeding as it shows what can be done with a food in spite of interruptions to the increase of weight by illness and bad hygienic surroundings.

In taking up the infants which were fed upon the breast in part and for the remainder of the deficient nourishment depended upon the bottle they furnish a very interesting study. It is quite safe to predict that an infant, if it has the breast only once, twice or three times in course of the twenty-four hours will thrive on the bottle and thrive much better than on the bottle alone. So uniform is this result that I am convinced through long observation that it is unadvisable to deprive the infant of the breast of the mother no matter how scant the secretion of milk in the breast may be. There seems to be something more in this than mere accident. It is very difficult to decide how much cow's milk to give to such infants in addition to the breast, for it is not practicable always, if at all, to measure the amount of milk secreted by the breast in question, nor is this at all essential. The baby is the best standard. An observant mother and physician will soon find out how much additional milk to give by observing how many nursings the deficient breasts are capable of.

In these cases, however, I never think of advising a mother to get a wet nurse, if her breasts will furnish one or more full nursings throughout the day. We can count on success with the artificial feedings in these cases. There is naturally the feeling in cases where the breast furnishes three or four full nursings in the twenty-four hours, that the mother is apt to overfeed with the bottle. In some infants this is undoubtedly so. In my clinic service I find the model baby, so-called, of the class in which the infant has had the breast and bottle. These infants as a rule do not suffer so much from dyspepsia or diarrhœa as the exclusively bottle fed infant.

The infants show a much greater average weight and daily increase than the baby fed on the bottle alone. In some infants the signs of overfeeding are too apparent and the mothers must be told about its dangers.

The daily increase is found to be the greatest in the 8-12 and 12-16th weeks, times at which the bottle fed baby has difficulty in holding its own.

Taking thirteen cases in rotation fed upon the breast and bottle we find the daily increase in grammes as follows:

			WEEKS.			
8–12	12–16	16–20	20–24	24–28	28–32	32–36
30	24.8	12	10.5	13.7	9.2	11.2

There is apparently here as in the exclusively bottle fed infants no great regularity or law of increase. This is, no doubt, traceable to the natural tendency of the mothers to overfeed. This overfeeding, while it may not be followed by disastrous effects in one case, will in the next be attended by dyspeptic phenomena, which cause a temporary depression in the weight.

The following table shows the average weights of the above thirteen infants at different weeks. The discrepancies in loss were caused by illness of some of the infants, depressing the weights of others.

4–8	8–12	12–16	16–20	20–24	24–28	28–32	32–36
4701	5631	6030	6895	7760	8008	7511	8114

Thus in the 28th to 32nd week indicated by an average of 7511, one infant weighed 8873 and in the 32nd to 36th week one infant weighed 9362, another 8463.

If we compare these averages with those collected by Cammerer for 59 bottle fed infants, we find them in favor of the

breast and bottle even with the very bad hygienic surroundings of my infants. The average weight table of my infants on a mixture of the breast and bottle runs quite close to Cammerer's tables for exclusively breast fed infants:

CAMMERER (Breast).			WEEKS.				
8	12	16	20	24	28	32	36
4825	5555	6215	6815	7265	7740	8150	8530
KOPLIK (Breast and Bottle).							
4701	5631	6039	6895	7706	8098	7511	8114

In the bottle and breast some months show a heavier average than the exclusively breast fed infants. I do not say that physically the babies of my clinic were more robust than babies fed exclusively on the breast, they certainly were ahead in this respect of the baby fed on the bottle alone.

A very instructive, though I admit not conclusive, instance of the good results of a small allowance of breast milk is the case of twins. Both of these infants starting at the 6th week, one with an initial weight of five pounds and one ounce (2511) with a scanty breast allowance at the sixth month weighed 4712; while the sister twin, without any breast allowance starting with an initial weight of 2635, was atrophic at the close of the same period and weighed 3348 grammes. This case of twins, though not a brilliant example of the good results of the breast, still emphasizes the good effects of breast allowance.

66 EAST FIFTY-EIGHTH STREET.

DISCUSSION.

DR. GRIFFITH.—I did not understand how the average weights of the twenty-five infants were obtained.

DR. KOPLIK.—These infants did not continue with me all the time, some dropping out at the end of five months, others remaining the whole nine months. If I took an infant's initial weight and then followed it up for five months I considered that I was justified in using those months in the calculation. Not more than eight did this.

DR. ROTCH.—Were they all fed on the same mixture?

DR. KOPLIK.—They were.

DR. ROTCH.—I think the work of Dr. Koplik has been very interesting, and he deserves a great deal of commendation for carrying out the details. But all his cases were ambulatory.

and, as he says, cannot be compared with cases in the hospital. Unless a scientific work is carried out in a scientific way you meet with obstacles constantly. It seems to me that if you are going to test any feeding you should have the child under supervision as you would in a laboratory; you must either have it in the hospital, or in a private family under the strictest supervision. What struck me at once was that all the children were fed from the same mixture, and very strangely they all did well. If you feed a hundred cases with the same food they will not all do well.

DR. KOPLIK.—I do not contend that all my patients did the same.

DR. ROTCH.—What became of those who were not doing well? If there was a large number that did not do well, I do not see why you should think so favorably of the food. It seems to me that if those babies were doing well, they were getting something else than just what Dr. Koplik thought they were. As they were ambulatory cases of course he could not watch them.

DR. COTTON.—Did I understand Dr. Koplik to say that he changed that mixture by the addition of some milk?

DR. KOPLIK.—Only for very young infants, up to the second month.

DR. MILLER.—May I ask Dr. Koplik why he used that particular mixture? Was it because it is the most practical for the greatest number of infants, or was it a question of economy, and were the infants taking this mixture very constipated? We might suppose so from the low amount of fat.

DR. KOPLIK.—This work is open to the objection that Dr. Rotch has made. I could not tell when the babies went home whether or not the mother gave them an extra bottle of milk. I admit that, because I want to show you the great difficulties in securing definite ideas as to the gain in weight of bottle fed infants. I only brought this forward to show the increase of weight of bottle fed infants under a certain mixture, and not to show that all do well with any one mixture. As to why I used this mixture, I would say that it was simply convenient and applied to most cases. Whether a baby should get this mixture or Liebig's is not the question. The question is what is the normal increase in weight under those circumstances, and is this given infant doing as well as it should?

DR. ROTCH.—That has not been proved. The observations have not determined what a prosperous bottle fed infant is, and it cannot be done with ambulatory babies.

DR. KOPLIK.—I think we could tell better whether this is so Dr. Rotch would bring some of his cases of increase in weight

so that we could see which method is best. This mixture was one of the first brought to our notice by Heubner. It is convenient and can be prepared by the mother herself. The mothers prefer to take chances on a mixture they can put up themselves instead of a more elaborate mixture. In the future I may change to some other mixture.

DR. ROTCH.—Where shall we get definite data if we work in that way from year to year? We are told that it is well to give this food to babies because it is the most convenient. That is not scientific work and it is not the way to prove that the food is the best. We do not know what our babies are getting and an ambulatory test has no scientific value.

DR. ADAMS.—I would like to ask if a baby in poor hygienic surroundings placed upon that mixture gains in weight as shown by the chart for six months and how much would he expect a baby under favorable circumstances to gain upon the same mixture.

DR. KOPLIK.—I cannot tell. I have not observed enough cases in private practice to make such an estimate.

DR. ADAMS.—I am accustomed to weigh babies every week and I am not satisfied unless they gain at least four ounces a week on substitute feeding.

DR. CRANDALL.—I see one point of objection to the use of such a single formula, namely: The fact that it will be so frequently adopted by practitioners who read the paper, without regard to the special needs of the infants they are feeding. Many physicians have not yet grasped the important idea that *modified milk* means not a special formula, nor even several special formulæ, but *any* formula that is adopted to the special case. They pounce upon a formula because it is easy to use and they unwisely expect that it is going the prove the proper food for every case. I shall not be surprised to soon see physicians writing in the medical journals concerning "Koplik's formula," a result, I know, which he will himself deplore.

DR. MORSE.—It seems to me that the author has simply shown that a certain rather small number of babies, fed on a certain mixture, more or less perfect or imperfect, according to the point of view, have gained certain amounts of weight in a given period of time. If I am not mistaken other babies that did not gain, or lost, on the same food and under the same conditions have not been counted. The results are interesting, but of little value from any other point of view.

DR. WENTWORTH.—I think we have all noted gains following very slight changes in the formulæ. It is a common occurrence for an infant to stop gaining on a given formula and to gain at once when a very slight change is made, either in

the strength of the modified milk or in the quantity. This alone would be sufficient to preclude the adoption of any one formula.

As regards the mother's milk, I think from analyses that have been made it is pretty certain that when the milk becomes scanty it is very apt to be a poor milk and apt to upset the baby. I understood Dr. Koplik to recommend any breast milk, "no matter how scanty," rather than artificial feeding alone. I do not agree with him.

DR. CHAPIN.—Aside from the analyses of these milks we must fall back on clinical experience, and my experience is contrary to that of Dr. Wentworth. While it may be true that the albuminoids are high and the fats are low, still on the whole, it is a better thing to give the baby breast milk with the substitute feeding rather that cut it off entirely.

DR. BLACKADER.—In those instances in which the mother's milk is deficient in quantity, and defective in quality, and the infant's nutrition seriously fails, it is better to stop the mother's milk altogether. But in the majority of cases when we have to deal only with a scanty milk supply in the mother, artificial food in sufficient quantity to supplement the mother's deficiency will, in my experience, be better for the infant than stopping the maternal supply altogether. When we secure cessation of worry, and sufficient sleep for the mother, the quality as well as the quantity of the maternal supply improves. It is no light measure to at once order a wet nurse, or at once put the child wholly upon artificial feeding. The whole subject is a matter for careful judgment; and I should be sorry if this Society were to lay down any absolute rule upon the matter.

DR. WENTWORTH.—I think there has been a misconception of my point. Everybody recognizes the value of mixed feeding. I still maintain that when the milk is very scanty it is usually a bad milk.

DR. FORCHHEIMER.—I think we have drifted away from the discussion of the proper subject. We have to establish first what the normal gain of the child should be, and I take it that that is one of the attempts made by Dr. Koplik. He does not want to compare this food with other foods except to show how much weight can be gained on this food. I confess I should be sorry if in private practice I got such results as Dr. Koplik and others have reported. I agree with him that mixed feeding, provided the breast milk agrees with the child's digestive organs, is to be continued despite the analysis. There is only one analysis that is worth anything, and that is the treatment of the food by the child's stomach. Physiological chemistry is not far enough advanced yet to give us positive data as to the best food for children.

We could not make a better collective investigation, nor one of more importance, than a study of the normal gain of weight in children, whether it be with modified milk, breast milk, or any mixture we choose to use.

DR. ROTCH.—That has been done over and over again and done well.

DR. FORCHHEIMER.—I am not familiar with many large tables of that sort.

DR. KOPLIK.—In closing I want to say that Dr. Forchheimer has been kind enough to state my case for me. This is merely an attempt to get at the well-being of a bottle fed infant and to determine what we ought to expect of a bottle fed infant. I agree that it would be very instructive to the profession to make a collective investigation. I do not advocate this particular mixture, nor give it to every baby.

Changes in the Nerve Cells in Infantile Diarrhœa.—Müller and Manicatide (*Deut. med. Woch.*) have made some interesting observations on this subject in Prof. Heubner's clinic. It was only by the help of Nissl's method of staining that the minute alterations in the nerve cells were able to be demonstrated. The central nervous system was examined in seven cases of infants under three months old; fever was present in five cases, and in two death took place without any appearance of fever; in three cases the infants had been ill for some time; the rest, however, had short illnesses. The examination was conducted from two to six hours after death in order to obviate any *post-mortem* changes which might take place in the nerve cells. Changes in the brain and spinal cord were found in all cases. Cells showing various degrees of degeneration were seen in close proximity to one another; the different stages in the morbid process could be accurately determined. The first abnormality described was an irregular distribution of Nissl's corpuscles; this was dependent upon a process of disintegration affecting either the whole of the cell body, or else portions in the neighborhood of the nucleus or the periphery of the cell. Concurrently with this disintegration process, the corpuscles either diminish in size or else enlarge; they become either paler or darker than normal, and they often lose their polygonal form. In more advanced cases the corpuscles disappear entirely, and their place is taken by a fibrillary network containing a clear substance in its meshes. In the cells showing marked changes the nuclei were darker than normal, and the nucleoli were enlarged. The presence of fever appears to have no influence on the degree or form of the lesion. There also appears to be no connection between the severity or duration of the illness and the character of the degeneration in the nervous system.—*Brit. Med. Journ.*

CONGENITAL CYSTIC KIDNEYS WITH THE REPORT OF A CASE.*

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WITH A

PATHOLOGICAL REPORT.

BY W. M. F. COPLIN, M.D.,

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Mrs. J., aged twenty-eight years, family history good, during the past two years she has suffered with migraine, the attacks gradually becoming more frequent, and at present averaging twice a week. Five pregnancies, the first resulting in a miscarriage at three months. The children of the second and third pregnancies are living and healthy, and aged respectively four and one-half, and three and one-third years. The third child presented by the breech, the labor was easy, but the child was still-born at full term. The infant was small, and the bones of the head more freely movable than normal. It is possible that in this case death resulted from some internal congenital defect, perhaps cystic kidneys, as the condition has been reported in two or more children of the same mother.

The here reported case was the result of the last pregnancy. A slight bloody vaginal discharge was noticed twice in the first two months after conception. At the fifth month severe abdominal and lumbar pains were felt, lasting a few hours and requiring the use of morphine; slight pain mostly abdominal continued for several succeeding days. A slight vaginal discharge of blood was again noticed during this period of pain. Labor pains were felt occasionally during the week preceding the birth of the child. The confinement at full term was rapid and easy, and I was called to see the child by the physician in attendance about twenty minutes after its birth.

The baby was well developed but distinctly cyanotic; it was breathing feebly, the heart's action was distinct. The cyanosis

* Read before the American Pediatric Society, Deer Park, June 20, 1899.

appeared to be more marked than the heart's action and feeble breathing should produce. The body was limp and the child could not be aroused. Slapping, hot and cold spongings, and artificial respiration produced absolutely no effect of any kind, and the child died forty-five minutes after birth.

The autopsy made twenty-four hours after death, showed a normal heart, small areas of lung tissue containing air; liver, spleen, and mesenteric glands normal and both kidneys cystic.

The etiology of these congenital cysts has not as yet been clearly demonstrated. The explanation given by Virchow that the cysts were dilatations of the uriniferous tubules, resulting from a prenatal inflammation, thus leading to retention of secretion of urine and subsequent dilatation, has now been largely abandoned and the theory of Shattock reached after systematic histological studies is generally accepted. Shattock claims the condition is due to a defect in development, and that the mesonephros, or Wolffian body, becomes joined with the kidney or melanephros, and the cysts are formed in remnants of the mesonephros, embedded in the true kidney. The coexistence of other congenital defects, as imperforate anus and cleft palate, seems to favor the view of Shattock. The term "renal adenoma" has been suggested by Goodhart, and is supported by the studies of Bateman and a specimen presented by Edwards.

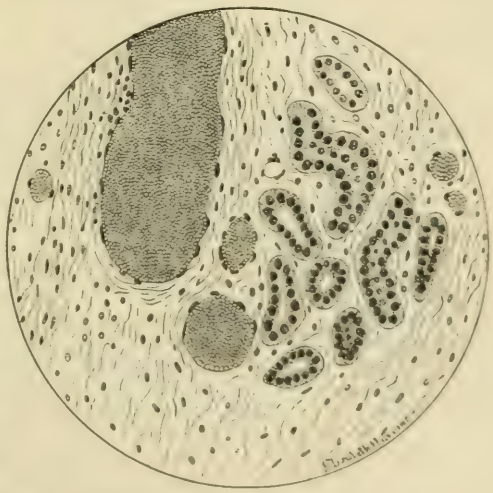


Fig 1. TUBULAR GLANDS RESEMBLING SWEAT GLANDS.

Most writers describe the finding between the cysts of kidney tissue more or less altered, or fibrous tissue containing renal tubules and glomeruli. In the cystic kidney of adults, kidney tissue has, as far as I can learn from a study of the subject, always been found; it has not been invariably present in the congenital cystic kidney, and was not demonstrable in my case.

Tubular glands resembling closely sweat glands and smaller than normal renal tubules are shown in Fig. 1 and may be the contracted portion of Henle's loop.

The cortical portion of the kidney is where cystic disease is usually first noticed and most extensive. The cysts vary in size from a pigeon's egg to a space hardly larger than the normal uriniferous tubule.

An examination of the cyst contents usually show cholesterin to be present and rarely urea or uric acid. Albumin, blood pigment, triple phosphates and fat are commonly found. Cells undergoing degeneration are seen in the cyst cavities. The cyst fluid in the writer's case had a specific gravity of 1009, was clear and contained albumin, trace of urea, a few cholesterin crystals, a few leucocytes and some broken down cells.

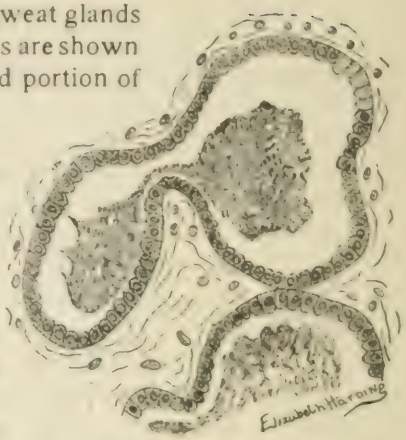


Fig. 2. CYST WALL LINED WITH COLUMNAR EPITHELIUM AND CONTAINING BROKEN DOWN CELLS.



Fig. 3. CYST WALL LINED WITH FLATTENED EPITHELIUM AND CONTAINING BROKEN DOWN CELLS.

The case here reported shows distinct cyst walls lined by columnar epithelium; in some instances the tall form (Fig. 2), in others the low columnar type. Other cysts are lined by flattened epithelium, as in Fig. 3. According to Ziegler, Osler, and others the cells lining the cyst wall are usually flattened epithelium.

A distinct connective tissue cyst wall surrounds all cavities, which in a doubtful case might aid in the diagnosis, as in the cystic kidney of adults, as shown by Meigs, the contents of the cyst may be in direct contact with the kidney tissue.

If the kidneys are not so large as to seriously impede labor, and there exists no other malformation incompatible with life, the child may be born alive; usually, however, death occurs during delivery or soon after birth. It seems to be a matter of common belief, that a certain number of cases live well into middle and advanced life in spite of the congenital cystic condition, and it is claimed the disease may be present for years without producing any serious symptoms or even being suspected.

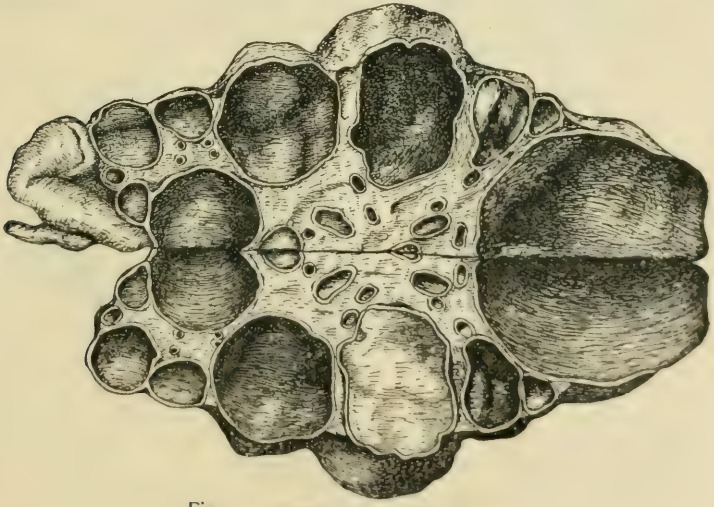


Fig. 4. CONGENITAL CYSTIC KIDNEY.

The size and probably the number of cysts increase with age, gradually producing tumors, often easy of recognition from their large size and possible pressure symptoms. In adults, urine of low specific gravity and excessive quantity is noted, with albumin in small amounts and an absence of casts. Hæmaturia may be occasionally present. The changes in the heart and arterial system resemble those of interstitial nephritis. Uræmic symptoms are not uncommon. Holt, in about eleven hundred consecutive autopsies, reports three cases of kidneys containing cysts. The children died between the seventh and tenth month, without presenting any renal symptoms. I can

report no symptomatology for the disease other than the meagre description given of my case.

The adrenals showed nothing noteworthy, but tissue resembling adrenal gland was found in sections of the kidney.

The lumen of the ureters was distinctly smaller than normal.

The diagnosis is usually a matter of some difficulty, and as the children are usually still-born or die soon after birth, little opportunity is offered for studying the symptomatology. In a suspected case, hydronephrosis, sarcoma of the kidney or retroperitoneal glands and echinococcus cyst of the kidney should be

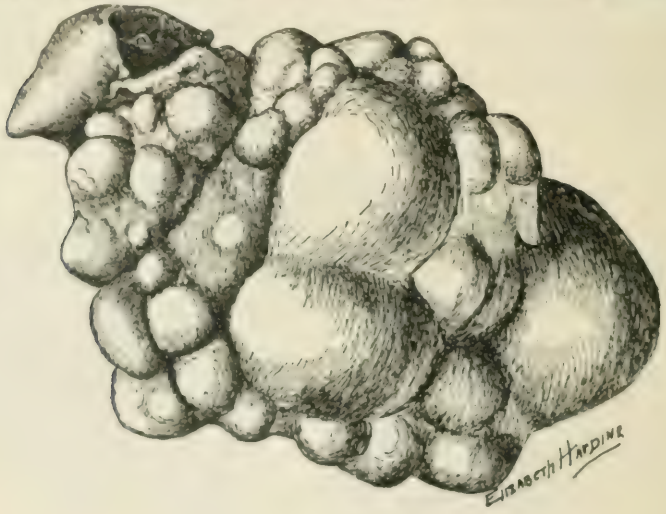


Fig. 5. CONGENITAL CYSTIC KIDNEY.

considered. The fact that congenital cystic kidney is bilateral, and from a study of cystic disease in adults is usually associated with hypertrophy of the left heart and increased arterial tension and that we have a urine of low specific gravity with albumin, hæmaturia and no casts, would probably enable the diagnosis to be made.

Twelve cases of cystic disease of kidney and liver combined have been reported by Kennedy. In these cases small cysts were found irregularly placed in both organs.

Treatment by drugs offers no hope for cure. Surgical interference is rarely justifiable, as the condition is usually bilateral.

DISCUSSION.

DR. FREEMAN.—These cases of congenital cystic kidney are not particularly rare. Virchow states in his work on tumors that he has seen a number of them. They sometimes reach an enormous size, so as to form an impediment to labor. In a case that I reported last winter the fœtus was only sixteen inches long and the left kidney alone was six inches long. The diaphragm was pushed up to within half an inch of the axillæ. On examination the kidneys were found to consist of a mass of cysts but in the periphery of the kidney we found a few Malpighian bodies. No tubules were seen. This case presented other deformities, an encephalocele, and six fingers on each hand and six toes on each foot. The cause of the malformation it seems to me was more likely a malarrangement of the cells of the kidney, so that when they secreted the secretion was carried into sacs instead of into tubules.

PATHOLOGICAL REPORT.

LEFT KIDNEY.—The organ is not typically kidney-shaped. It measures 10.25 cm. in length, 6.1 cm. in width, 4 cm. in thickness; at one end is what appears to be a normal adrenal. The surface is irregularly bossed by projecting cysts. The largest of these cysts is egg-shaped and measures 3.5 cm. in its longest diameter, 2.75 cm. in its transverse diameter. From this large cyst to a cyst not more than 1 or 2 mm. in size, cysts of all possible intermediate diameters can be recognized. The wall of each cyst is a transparent, thin membrane from which it is impossible to strip any tissue which might correspond to the capsule of the organ. There passes off from what would correspond to the pelvis of the kidney, what is evidently a ureter. It is impossible to say from the specimen presented exactly what the blood supply has been.

The organ is laid open in its longest diameter the incision being made from the convex surface toward what would be the pelvis, passing through eleven (11) cysts. The fluid contained within these cysts is clear and limpid, and has a specific gravity of 1.009. Chemically it contains a trace of albumin and such a small quantity of urea that it is practically impossible to estimate it by the ureaometer. Microscopically it contains a small quantity of cellular detritis, a few leucocytes and a few cholesterin crystals. The walls of the cysts are fairly uniform in thick-

ness, measuring 1 to 2 mm. The inner surface of the cysts is smooth and regular. The small amount of tissue between the cysts and toward the pelvis of the organ is white in color, resembling fibrous tissue. At some points it cuts with resistance not unlike that of dense, fibrous tissue. At one point absorption of the wall between two cysts has occurred, leaving two projecting septa which partially divide the cavity. Weight of specimen is 69.5 gms.

RIGHT KIDNEY.—This organ is not even kidney-shaped, except in a very general way. Its surface is composed practically entirely of cysts. It measures 8.5 cm. in its longest diameter by 7 cm. by 5.5 cm.

At one end is what appears to be an adrenal. The cysts seen upon the surface present no important difference from those already described as present in the opposite organ. The largest cyst, however, is larger than the largest cyst on the opposite organ, measuring 4.5 cm. by 3.5 cm. The organ was not incised. Weight of the specimen is 87 gms.

Tissue from the ureter, adrenal of left kidney, the walls of a number of cysts, and portions of the connective tissue from that part of the organ which corresponded to the pelvis, were fixed in corrosive sublimate, dehydrated, infiltrated with paraffin, sectioned and stained with hematoxylin and eosin, lithium-carmin and picric acid, carmalum and picric acid, hematoxylin and picric acid, and toluidin blue alone and with eosin.

MORBID HISTOLOGY.—Transverse section of the ureter: The connective tissue wall of the ureter shows little that may be considered normal. One of the most striking things to be noted is its richness in blood-vessels, which are everywhere to be observed in transverse, longitudinal and oblique sections; for the most part the vessels are filled with blood. Blood is also seen diffused through the surrounding lymph spaces of the adjacent connective tissue. Recognizable layers of unstriped muscle fibres are not present, although immediately around the central lumen one finds more or less irregularly distributed, long spindle cells with rod-shaped nuclei, not, however, so grouped as to form a distinct layer in the wall. Between and around this layer of muscle tissue one finds connective tissue cells irregularly interlacing. Just under what appears to be the epithelial lining of the tube a few unstriped fibres are to be recognized; they are not, however, arranged in anything like their proper order.

The epithelium which lines the tube has been detached, either in the manipulation incident to the preparation of the specimen or was absent during life, and we find only a part of the inner aspect of the tube, covered by epithelial cells. These epithelial cells are extremely irregular in conformation, size and arrangement, if one may call their loose placing an effort at arrangement. They stain faintly, at some places not at all, are extremely granular and not infrequently fragmented. In none of the sections which I have examined is the lumen of the tube regular, being for the most part extremely uneven, the unevenness produced by projections of the wall as, on transverse section, cone-like extensions toward the centre. Such an arrangement is seen in the normal ureter, but in the normal organ they are comparatively uniform. It is not possible in this specimen to recognize a distinct muscular or fibrous coat, and the epithelial layer of the mucous coat bears little resemblance to the normal lining of the tube. Transverse diameter of the ureter is about 2 mm., the lumen does not exceed .1 mm.

Sections of the adrenal show nothing abnormal or worthy of note.

Sections of the pelvis of the kidney: The first thing that strikes one on examination of these sections is their extraordinary richness in blood-vessels. From blood-vessels one or two millimetres in transverse diameter, to capillaries of the smallest size, many intermediate diameters may be noted. Many of these blood-vessels show bulbous enlargements (varicosity); they are practically all distended by blood, the corpuscular elements of which are packed so closely as to preclude easy recognition of the individual elements. Around some of these blood-vessels, areas of rhexis can be recognized and scattered through the adjacent connective tissue one sees not a few red blood cells. Surrounding these blood cells is a richly cellular connective tissue composed of the following elements:

A few long spindle-shaped cells with rod-shaped nuclei, resembling unstriped muscle fibres. Sometimes these are arranged in lines. There is also present an oat-shaped cell, the length of which is about twice the diameter of a leucocyte. Lymphoid cells are present but not abundantly so. Occasionally one notes the presence of an endothelioid cell, these vary in size between 12 and 15, or even 20.

The long spindle-shaped cell with ovoidal nucleus, the so-called fibrous tissue cell, is present in abundance. It may be said in a general way that the tissue which composes this part of the organ is fibrous tissue in various stages of evolution, differing, however, from the normal in its extraordinary richness in blood-vessels. Occasionally areas are noted which contain myxoid cells, the areas surround remaining elements of gland tissue. Nerves have not been noted. Occasionally a small cyst may be found in this area, although they are not abundant.

THE CYSTS.—The majority of the cysts are lined by tall columnar epithelium, and in some of them the columnar epithelium is very long, and at points there is the barest suggestion of ciliation. Nowhere, however, can cilia be satisfactorily demonstrated. The epithelial lining is not uniformly of the high columnar type, occasionally a portion of the lining of a cyst wall, or, in other cysts, the entire lining may be of the low columnar type, which at times is so flat that one is tempted to consider it squamous. In some of the cyst cavities the epithelium is desquamated and has fallen toward the centre of the cavity, in which it may be found in all stages of granular and hyaline transformation. Some of these cysts in which desquamation has taken place show what appears to be an attempt at regeneration of the epithelium on the wall. In the larger cysts demonstration of an epithelial covering is not possible; a study, however, of the smaller ones would lead one to believe that in the beginning they have all possessed an epithelial lining.

In the medium-sized cysts, and in the smaller ones, the wall, whether lined by epithelium or not, is composed of developing connective tissue which shows the occasional presence of unstriped muscle cells. Some of the cysts contain a granular detritis, apparently a precipitate of some albuminoid, although at times this substance resembles hyaline or colloid material. Where the cysts approach the surface of the organ, it is impossible to say that the wall shows sufficient differentiation to justify one in believing that the capsule, if such existed, was a distinct part of the tissue.

GLANDULAR ELEMENTS PRESENT.—A careful search of a comparatively large number of sections fails to demonstrate the presence of any characteristically arranged or structurally perfect renal tissue. One finds oblique, transverse and longitudinal sections of tubular glands, which in many areas bear a striking

resemblance to sweat glands. The smallest of these tubules are smaller than the normal tubules of the renal cortex, resembling in size the contracted portion of Henle's loop. Occasionally the tubules show, in a most striking manner, the twisting and convolution so commonly observed in sweat glands. The epithelium which lines them is of the low columnar or cuboidal type with comparatively large nuclei which take the basic dyes intensely. Occasionally a large tubule will be observed which shows more than a single layer of epithelium, resembling the partial stratification seen in the ducts of sweat glands. Practically all of these gland elements show an arrangement upon a membrana propria, although this structure is not equally well developed in all parts. Some of the tubules, whether alone or congregated in masses, are embedded in a matrix of myxoid tissue. This tissue is not rich in cells, containing at most but comparatively few multipoliar or branching cells. From a study of the grandular elements present, and from a close examination of the cysts, one is led to believe that the latter are evolved from the former by the gradual accumulation of fluid in the interior associated with degenerative changes in the epithelium and condensation and absorption of the periglandular connective tissue.

A careful search made in all parts of the kidney fails to reveal the presence of any structure which in the least resembles a Malpighian body.

DIAGNOSIS.—Congenital cystic disease of the kidney.

1713 SPRUCE STREET.

Loss of Appetite in Children.—Künkler (*Allg. Med. Central Zeit*) says that loss of appetite is liable to occur in delicate children and in convalescents from acute diseases. It is often difficult to overcome the dislike of food in such cases. Dr. Künkler recommends the new drug, *orexin tannate*, as a good stimulant of the appetite, and recounts a series of cases showing its good effects. The dose is 0.5 grammes (about 8 grains) two hours or so before meals twice a days. It may be given as powder, being without taste or odor, or in the form of chocolate lozenges. No food or drink, except water, is to be taken between the medicine and the next meal. Several days (5 to 10) may elapse before the effect of the medicine is apparent.—*Canada Lancet.*

A CASE OF PORENCEPHALUS.*

BY GEO. N. ACKER, A.M., M.D.,
Clinical Professor of Medicine and Diseases of Children, Columbian University;
Visiting Physician to the Children's Hospital and to the Garfield
Hospital, Washington, D. C.

C. W., aged four years; male; colored; entered the Children's Hospital, September 17, 1898.

FAMILY HISTORY.—Mother is living and in good health. Father is dead, cause, delirium tremens. No tubercular or syphilitic history obtainable.

PREVIOUS HISTORY.—Labor normal. Was of good size and well formed. Was breast fed until one year of age, and then was fed on regular diet. Soon after birth the mother noticed that the eyes, especially the right one, had a peculiar appearance, and that he did not move his right arm or leg. His head was also markedly inclined to the right side. He has never walked or made any attempt to do so. He has never made an articulate sound. He cries out and makes signs when he is hungry, but is quiet at other times. He has never attempted to feed himself. His bowels have been regular.

PRESENT CONDITION.—Looks dull and stupid; holds his mouth open; nose flat; eyes wide and staring with pronounced internal strabismus on the right side. Head large and well formed with frontal bosses. Body well formed; abdomen protuberant. Lies in bed on back with legs slightly flexed on pelvis, right leg more strongly flexed than left. The right forearm is strongly flexed on arm and cannot be extended. The arm cannot be moved away from the body. He cannot hold anything in the right hand. The left forearm is slightly flexed on the arm. The grip is but slightly impaired in the left hand. There is a noticeable atrophy of the muscles on the right side in both arm and leg. He makes only slight movements with the right side and can use his left side scarcely better, the range of motion in left arm and leg being very limited. The muscles are soft and flabby.

INTEGUMENTARY SYSTEM.—Skin harsh and dry. Does not sweat much. No eruption.

*Read before the American Pediatric Society, Deer Park, June 27, 1899.

GLANDULAR, OSSEOUS AND URINARY SYSTEMS.—Negative.

CIRCULATORY SYSTEM.—Heart sounds normal. Temperature 101° F. Pulse 112.

RESPIRATORY SYSTEM.—Diminished expansion on right side with diminished breath sounds. Some dry râles throughout both lungs.

DIGESTIVE SYSTEM.—Normal. The appetite is enormous.

NERVOUS SYSTEM.—Sleeps well. Makes no effort to talk. Does not appear to suffer pain. When he is hungry or angry he makes a loud, bellowing sound. There is no twitching of the muscles. The child lies quietly and does not make any voluntary movement. There is slight loss of tactile sensation in the body for he cannot locate irritating articles with exactness. This is much impaired on the right side (arm and leg).

September 19.—The child appears to have some difficulty in swallowing, but an examination of the throat shows no lesion. Voids urine in small amounts but frequently. Has perfect control over the sphincter muscles. Takes food eagerly. One stool in twenty-four hours normal in character.

September 21.—Sleeps well. During the day he lies quietly on his back and makes no attempt to change his position. Has slight difficulty in swallowing.

September 23.—Takes nourishment well. Stools and urine normal in character. Ordered one-fourth of a grain of thyroid extract three times a day.

September 25.—Condition about the same. Thyroid extract increased to one-half a grain. Swallows with less difficulty.

September 29.—The child seems bright at times and appears to recognize different persons. He had not changed since he entered the hospital. He had a fever for a week, but the temperature has been normal for several days.

October 1.—General condition about the same. Child has had frequent profuse sweats the last two days. Cried out frequently during the day without apparent cause, but was quiet and slept well during the night. Takes nourishment well.

October 3.—The child is more quiet and does not sweat much. Thyroid extract increased to one grain and a half three times daily.

October 7.—Pulse weaker and rapid to-day. He seems nervous and irritable and does not like to be moved. Cries out frequently. Sweats still pronounced, but confined principally

to head and neck. Ordered a teaspoonful of whiskey every four hours.

October 9.—The patient is not so nervous. There is a marked change in his power of observation, as he appears to notice his surroundings. If anyone offers to shake hands with him he will put out his left hand. Pulse is stronger and less rapid.

October 10.—Thyroid extract increased to two grains three times daily. Has been sweating profusely during the last twenty-four hours.

October 12.—Nervous symptoms have abated. The sweats are not so profuse. Takes his nourishment well and voids his excreta normally. Makes no effort to move unless spoken to.

October 24.—The child has continued in about the same condition. The thyroid extract was increased to two and one-half grains on the 18th instant. Heart's action is good. Does not cry out except at or near meal time.

October 26.—Child is restless. Cries out frequently. Pulse rapid and weak. Profuse sweats. Thyroid extract reduced to one and a half grains.

October 28.—Since the dose of thyroid extract has been reduced, the nervous symptoms have disappeared and the heart's action has become stronger and more regular.

November 3.—Condition has become worse as he does not take nourishment well and swallows with great difficulty.

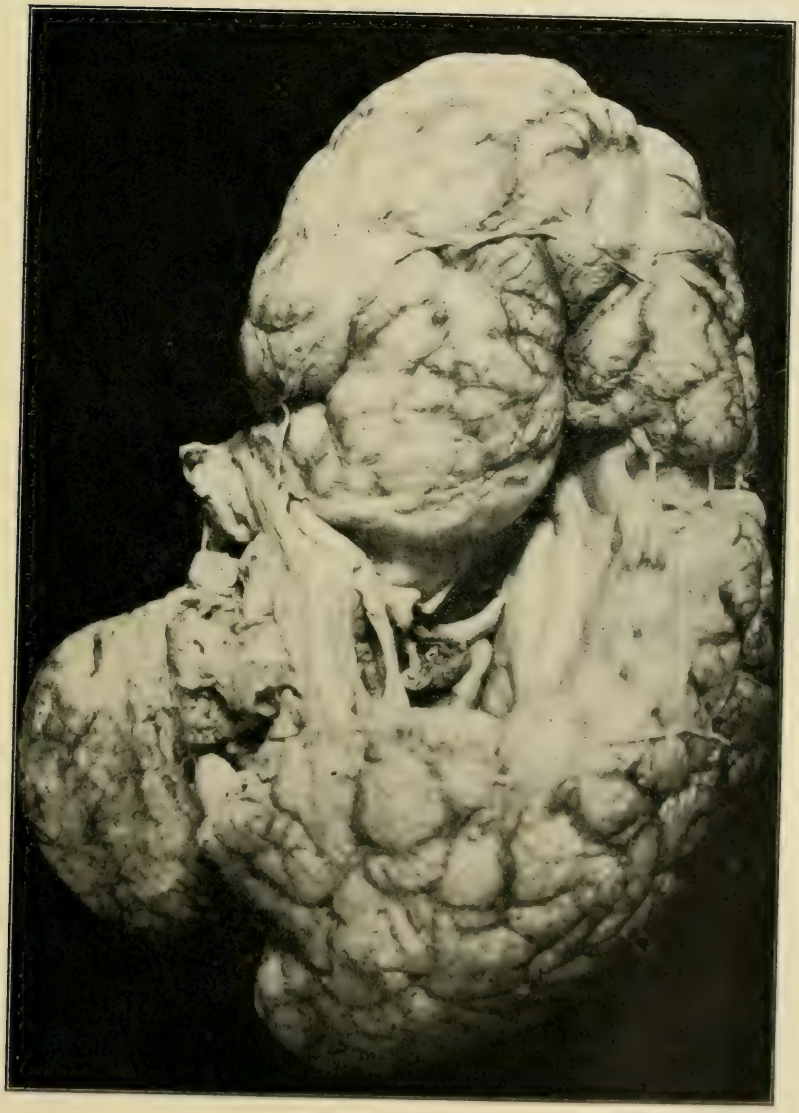
November 7.—Patient is weaker. Does not take full amount of nourishment. Cries out frequently as if in pain.

November 9.—Became progressively weaker and died in the evening. Temperature just before death was 107.7° F.

Post-mortem examination made thirty-six hours after death.

GENERAL APPEARANCE.—Body was emaciated. Muscular atrophy marked on right side of body. Head apparently normal in size and shape.

ABDOMINAL CAVITY.—Intestines normal. Stomach slightly enlarged and somewhat distended with gas. Spleen bound to greater curvature of stomach by old adhesions. Spleen was also adherent to end of pancreas. Spleen normal in size and color. No tubercles. Kidneys normal. Liver normal in appearance, adherent to diaphragm by old adhesions throughout its superior surface.



PORENCEPHALUS—VIEW OF BRAIN SHOWING DEFICIENT TISSUE AND ATYPICAL FISSURES.

THORACIC CAVITY.—Both lungs crepitant throughout. Right lung adherent by delicate fibrous adhesions to the entire pleural surface with the exception of the diaphragmatic portion. No adhesions in left pleural cavity. Slight emphysematous area along edge of left lung anteriorly. Thymus gland prominent and of a deep red color.

CRANIAL CAVITY.—No inflammatory condition present. On left side there was a large cyst.

Report on brain by Dr. D. S. Lamb.

The brain was somewhat injured about the left temporal lobe when brought to the museum. It has since been bisected nearly in median line, a slight preponderance on the right. The respective weights of right and left hemispheres are 19.5 and 14.5 oz.

The fissuration is quite atypical. The right Sylvian fissure is distinctly marked; the left Sylvian fissure is lost in the porencephalic depression. The Rolandic fissure is unrecognizable in its normal situation, but above, beginning about one inch in front of the normal situation, there is, on the right side, an unusually deep but irregular fissure, and on the left the porencephalic depression. The lower end of each seems to correspond in position to the normal lower end of the Rolandic fissure. If this is the Rolandic fissure, then there is an over-development of the parietal lobes, or perhaps to speak more accurately, an under-development of the frontal lobes. The basal arteries seem to be of normal size. Perhaps if their terminal branches were examined the abnormal development might be explained.

The study of the convolutions is difficult on account of the peculiar fissuration. There is, on the left side, either an absence of the left ascending frontal with progressive absence of the other frontals from above downwards, or there is partial absence of both ascending frontal and parietal and lower frontal. If the former supposition is correct, then there should have been more or less paralysis of motion on the right side of face, arm and leg, with or without loss of sensation, and probably motor aphasia.

The lateral ventricle on the right side appears normal; on the left side communicates directly with the rather funnel-shaped depression mentioned. The third and fourth ventricles are normal. The basal nerves are present and seem normal except left olfactory tract and bulb, and right bulb and part of tract

which were probably disturbed in removal from cranium. The occipital notch on the right side is sharply marked.

This is a typical specimen of true porencephaly for the lesion took place early in fœtal life and resulted in an arrest of development of certain parts of the brain. The defects correspond closely to those parts supplied by the middle cerebral artery and I think was caused by some change in this artery.

I questioned the mother in regard to injuries during the pregnancy, but was informed that everything had progressed normally. The only etiological factor that I could ascertain was alcoholism in the father and possibly syphilis.

The term porencephalus should be limited to such cases as this where the defect in the brain is due to some cause which has occurred before the birth of the child.

913 SIXTEENTH STREET.

Relapse in Scarlatina.—Richard H. Kennan writes upon the subject in *The Dublin Journal of Medical Science* the note containing evidence upon the rare occurrence of relapse in scarlatina that has its foundation in observations made by Drs. Caiger and Kennan. Dr. Caiger after eliminating such cases where any doubt surrounded the diagnosis of the first attack, as well as those of abortive second attacks occurring late in the period of convalescence, found in a large statistical account a true relapse or early second attack in .5 per cent. of all cases admitted to hospital. He further stated that the severity of the second attack was inversely proportioned to that of the first. Dr. Kennan saw three undoubted cases showing relapse, while Dr. MacDowell Cosgrave is quoted as having reported upon two such cases.—*Montreal Medical Journal.*

The Bacteriology of Pertussis.—Otto Zusch (*Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten*) sums up our present knowledge of the bacteriology of whooping-cough, and reports the results of his study of twenty-five cases. In each of these cases peculiar small bacteria were found in the sputa, often in large numbers. They were sometimes seen in clumps or masses, or in leucocytes, and are probably identical with the bacteria described by others in this disease.

The bacteria seem to be more numerous in uncomplicated cases. When marked bronchitis or pulmonary complications supervened they diminished in number and were replaced by other organisms. This would seem to indicate that the organism does not infect the lungs. It is a short, small-sized bacillus, which grows on ordinary culture media. Animal experiments gave no positive results.—*University Medical Magazine.*

REPORT OF CASE OF ANURIA.*

BY A. C. COTTON, M.D.,

Chicago.

CLINICAL HISTORY.—Leroy Swedberg was born after a natural labor on the morning of February 28, 1899. The mother of the child was twenty three years of age, a Swede by birth. Her family history was negative and her personal history excellent. The date of her last menstruation was April 17, 1898. Nothing unusual was noted during the course of her pregnancy.

Analysis of a twenty-four hours' specimen of urine the day before delivery presented the following findings: Amber, slight turbidity, specific gravity, 1026; albumin, 0; sugar, 0.

Microscopical examination: 1. Calcium oxalate crystals. 2. Large amount of amorphous urates.

The baby, a male child, was plump, robust and weighed at birth eight pounds, but its skin did not present that boiled lobster appearance so characteristic of the new-born. It had the appearance as to color rather of a child three weeks of age. Upon examination the child presented no deformities or malformations.

At the end of twenty-four hours, as he had not urinated, a surgical probe was introduced into the urethra and was easily passed into the bladder, there being no obstruction. A condom was then attached to the penis, hot sitz baths were given, also hot fomentations to supra-pubic region and lumbar regions, but with negative results. At the end of forty hours a gum elastic catheter was introduced into the bladder and about 1 cc. of urine spurted out. Bimanual examination proved the bladder to be absolutely empty.

During the first eighty hours the child rested well, nursing every two hours. The rather dry skin gradually assumed a deep, dusky hue and toward the end of the fifth day presented marked cyanosis at times. The temperature ranged from 99° to 103.4° F.

NERVOUS SYMPTOMS.—At the beginning of the fourth day the child began to have convulsions which were tonic in character, beginning in the depressor anguli oris muscles and affecting the

*Read before the American Pediatric Society, Deer Park, June 29, 1899.



HEART IN THE CASE OF L. S., SHOWING COMMON STEM FOR AORTA AND PULMONARY ARTERY.

entire body, the respiratory muscles being principally involved. The convulsions, occurring at intervals of ten minutes and lasting one minute, became more frequent and gradually became clonic in character. Just before death they were almost continuous, and during the last twenty-four hours the child was in a deep stupor from which it could not be roused.

RESPIRATORY SYMPTOMS.—Respirations ranged from 40 to 80, quite regular at first, but toward the end became more shallow and irregular. Physical examination of the lungs negative.

CIRCULATORY SYMPTOMS.—Pulse ranged from 160 to 180. Second aortic sound highly accentuated, otherwise negative.

DIGESTIVE SYSTEM.—Tongue slightly furred and brownish-red in color. Appetite good until the third day when he refused to nurse and was fed from a spoon. This method was continued for twenty-four hours when he began to vomit, retaining nothing. The vomitus, at first, consisted of stomach contents, but gradually became fæcal, resembling very much in its character meconium, being very black and tarry. The bowels moved freely until the fifth day, after which they responded only to hot rectal enemata.

Abdominal palpation and percussion gave negative results.

RESUMÉ OF TREATMENT.—External. Hot sitz baths, hot fomentations, supra-pubic and lumbar, hot tub baths, dry heat.

Internal. Infusion of watermelon seeds *ad libitum*. Calomel, tincture of hyoscyamus, fluid extract of triticum repens.

Post-mortem report by Prof. Hektoen, March 4, 1899.

Leroy Swedberg. Age five days, eleven hours.

CLINICAL DIAGNOSIS.—Anuria.

DAY OF DEATH.—March 3, 1899.

ANATOMICAL DIAGNOSIS.—"Morbus cœruleus." Defective septum between pulmonary artery and aorta. Patent ductus arteriosus and foramen ovale. Cyanosis of the skin. Subpleural ecchymosis; fatty cirrhosis of the liver (probably); uric acid infarction of the kidneys; general infection with bacillus mucosus capsulatus.

Well-developed; fairly well nourished male infant; 51 cm. long; weighing 2657 gm. There are no external malformations. The surface of the body, both anteriorly and posteriorly, is bluish-red in color. The umbilical cord is dry and separating at the navel. Abdomen somewhat distended. The abdominal

cavity empty, the lining smooth. Diaphragm reaches the fifth right and sixth left rib. The pleural cavities empty and smooth as to lining, the visceral pleura being the seat of many hemorrhagic extravasations. The pericardium is also smooth, the cavity containing a small amount of clear fluid.

The pharynx, mouth, larynx, trachea and œsophagus are normal. The thyroid is of usual size, the thymus rather small. The lungs are fully distended and show many small deeply congested spots throughout the parenchyma. No bronchitis. The heart presents a right ventricle which is much larger than the left, which is situated more behind the right than usual. The walls of the two ventricles are of about the same thickness, but the cavity of the right ventricle is much larger than that of the left. The tricuspid and pulmonary valves are quite normal; the mitral and aortic valves are also well formed and normal, but there is an oval defect about 1½ cm. in its greatest diameter between the pulmonary artery and aorta, so that the beginning of the aorta and the pulmonary artery have a common trunk from which emerge, in the usual places, the right and left pulmonary arteries and the branches of the arch of the aorta. The ductus arteriosus is fully patent and quite large. The part of the aorta distal to this duct is wider than the transverse part proximal to the duct. The foramen ovale is widely open. The veins, pulmonary and cavæ, are quite normal. The ventricular septum is normal. The stomach and intestines are normal. The pancreas is normal. The liver and spleen are congested, the liver being soft and mottled yellow and red. The spleen weighs 10 gm; the liver 110 gm; the adrenals normal, weight 11 gm.

The uro-genital organs are normally situated. The bladder contains a small amount of turbid urine. The mucous membrane immediately around the uretal orifices is swollen and red. There is no dilatation of the ureters or pelves. There is marked uric acid infarction in both kidneys with some congestion of the pyramids. The kidneys weigh 26 gm. The brain and its membranes are normal; weight 38 gm. The lines of ossification are even and regular.

HISTOLOGICAL EXAMINATION.—1. Sections of the heart show only normal structural conditions.

2. The lungs are the seat of an extensive hemorrhagic infarction, the alveoli and bronchioles in places being filled to distension; otherwise no changes.

3. The liver is the seat of a marked passive congestion with fatty infiltration of the liver cells and some recent increase in the periportal connective tissue which is rather cellular.

4. The cortex of the kidneys shows cloudy swelling of the epithelium of the convoluted tubules. In the medulla the uriniferous tubules are crowded full with granular material which stains light blue with hematoxylin. The epithelial lining is intact and the vessels uniformly distended with blood. Sections stained with methylene blue show occasional encapsulated short bacilli here and there in all the organs, especially among the extravasated blood corpuscles and in capillaries of the lungs.

677 JACKSON BOULEVARD.

Pemphigus Neonatorum.—Newly born children suffering from pemphigus should be given a bath of 90° F., to which an astringent or disinfectant has been added, twice daily, or in case of weakliness once a day or even every other day. The infant should remain for from five to ten minutes in the bath. If a disinfectant is required, potassium permanganate may be added in such a quantity that the bath-water acquires a light purple color. Before the child is put into the bath the larger pemphigus blebs should be carefully emptied by pricking them with a needle and the pustular contents removed with a mop of absorbent cotton wool dipped into a 2 per cent. boic-acid solution. After the bath the skin must be carefully dried (avoiding friction) and dusted over with a dusting-powder composed of two parts of airol and ten parts of amylum. In cases of syphilitic pemphigus internal antisyphilitic treatment must be given at the same time. P. Munz, der Kinderarzt.—*Monthly Cyclopedia.*

Koplik's Early Diagnostic Sign of Measles.—Slawyk (*Deutsche med. Wochenschrift*, 1898, No. 17) confirms the observation of Koplik, that early in measles peculiar spots appear on the mucous membrane of the lips and cheeks. He found them present in forty-five cases out of a total fifty-two examined. The spots vary from 0.2 to 0.6 mm. in size, are round, bluish-white, slightly raised, and have a reddish centre about the size of a linseed. (This description differs somewhat from Koplik's.) The number of spots usually varies from six to twenty on each side, but there may be hundreds of them. Occasionally they are unilateral and most abundant in the vicinity of the lower molars. Microscopically they are found to be composed of fatty degenerated buccal epithelium. They are found in no other disease, and as they appear on the first or second day of the prodromal symptoms they constitute a very important early sign.—*American Journal of Medical Sciences.*

CLINICAL DIAGNOSIS CHART AND RECORD: A GUIDE TO BEDSIDE DIAGNOSIS FOR USE IN MEDICAL SCHOOLS AND IN PRACTICE.*

BY AUGUSTUS CAILLÉ, M.D.,

Professor of Pediatrics, New York Post-Graduate Medical School and Hospital.

The chart which I present for your consideration had its origin in an effort to instruct post-graduate students in bedside diagnosis. It is well known to most teachers in medicine that the majority of young practitioners, and particularly those who have not had the opportunities of hospital experience as internes, find it frequently extremely difficult to make a good clinical diagnosis.

Owing to the great strides which practical and theoretical medicine have made in the past twenty-five years the position of the general practitioner to-day is a peculiar one. He has found it impossible to keep abreast with the rapid progress in medicine and his position is that of Jack-of-all-trades and master of none; any young specialist feels himself his superior in his particular line, and, in our large cities, among the wealthy and rich the general practitioner finds himself little more than master of the ceremonies—the diagnosis and treatment is furnished by the various consultants and carried out by the trained nurse—therefore if the future family practitioner is to regain lost ground, again aspire to and reach that plane in the practice of general medicine which is properly his, and again enjoy the full confidence of his clientele, it must be *through his own individual efforts* by educating himself to become a diagnostician. In view of the complex character which are features of some of the special examinations this may seem an herculean task, but I am convinced that all medical men who are fitted by nature and proper education for their work will in reasonable time be-

* Presented to the American Pediatric Society, Deer Park, June 27, 1890.

come competent diagnosticians and will be capable of formulating precise indications for treatment, provided ample opportunity for laboratory and bedside instruction be offered, and provided that no time be wasted experimenting with thousands of old and new and useless drugs in the endeavor to adapt a complex, cumbersome and largely superfluous materia medica to the various symptoms of disease without one inquiry into the *fons et origo mali.*

If I understand the situation correctly the general practitioner must be

1. Master of physical diagnosis.

2. He must have laboratory training, particularly if he practices far away from laboratory facilities.

3. He must be able to make a local or regional examination, employing such of the methods of specialists which have become general property.

4. He must have a good knowledge of hygiene and dietetics.

In conformity with the views I have expressed, my chart is an attempt to systematize bedside diagnosis and its *modus operandi* is as follows: The student is given a patient and a chart and in following up the symptoms of the case presented he is gradually led through a complete routine clinical examination. After having secured his anamnestic data the student will inform himself as to the temperature, pulse, and respiration of the patient. Diet, stools, vomit, urine, blood are inquired into and investigated. Note will be taken also of the general symptoms indicated at No. 10, and finally, investigation of the special regions or organs involved to which the symptoms apparently point.

All observations are recorded on the last page of the sheet; the inner pages of the sheet contain a number of diagrams for recording lesions in colors.

Finally, the student will state his diagnosis, prognosis, and treatment, and then he will meet his clinical teacher by appointment, who will go over the chart with him, if possible, at the bedside and point out the merits or demerits of his work.

After a case has been disposed of in this way another case

and chart are furnished and after a few weeks of such work it is a pleasure and satisfaction to note with what increased confi dence the student approaches a sick bed. The chart may also be used for purposes of recording and preserving accurate records of interesting cases in general practice.

753 MADISON AVENUE.

The Incubation Period of Measles.—Dr. James C. Wilson (*Dunglison's College and Clinical Record*), lecturing on a case of typhoid fever, said that the most interesting thing about the case was that the patient stated that he was placed in an ambulance with a man suffering with measles, which he himself had never had. As a result he got another infection which ran its course independently of the fever. It was generally difficult, said Dr. Wilson, to fix definitely the period of incubation in these infective diseases, but here was a case in which the time of exposure was definitely known. On the thirteenth day after exposure the first symptoms of measles were noticed, and on the fifth day following the rash appeared, or eighteen days after the first exposure. In the text-books the time was variously stated at from seven to fifteen days; this case, taking the weakened condition of the patient into consideration, pointed to the longer period as being the more likely. As to the character of the rash, it was his belief that the character of the skin determined its intensity rather than the severity of the disease; in cases where the skin was of a sensitive, easily irritated nature the eruption was more marked than in less susceptible integuments.—*New York Medical Journal.*

Clinical Memoranda.

ANGIO-NEUROTIC ŒDEMA INVOLVING THE TONGUE AND LOWER LIP.

BY CHARLES GILMORE KERLEY, M.D.,

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A hurried call to a river town to see a two-year-old boy who was supposed to have been poisoned, was my introduction to the case in question.

The child was rather delicate generally, and was subject to attacks of indigestion; for a day or two an attack had been threatening. There was slight fever, loss of appetite, and irritability.

Five hours before I saw the patient, the nurse maid had given, in the absence of the parents, a teaspoonful of a cough mixture containing very small doses of muriat ammonia and syr. ipecac. The child had previously taken the medicine without inconvenience, but on this occasion immediately upon its administration the tongue and lower lip became enormously swollen. A physician was summoned, who, with the parents, doubted the nurse's statement, and thought that some irritant drug had been given by mistake. Upon the physician's arrival, half an hour after the cough mixture had been given, there was an alarming state of affairs. The child's tongue and lip, according to his statement, were swollen to several times their normal size, with mucous membrane tense and reddened. The thickened tongue protruded between the teeth, rendering swallowing impossible, and on account of the presence of adenoids, the breathing was seriously interfered with. The lower lip was swollen to several times its normal size, the mucous membrane reddened and angry in appearance. A wet dressing of bi-carbonate soda solution was applied to the parts by the physician who remained with the case.

The swelling subsided satisfactorily under the treatment, and when I saw the case the tongue was still enlarged, not over twice the normal size, however, and presented a deep red,

glazed appearance with papilla greatly enlarged. The lip was still considerably swollen, at least three times the normal size, and like the tongue, the mucous membrane presented an angry, congested appearance. There was no fever, and but little prostration. Upon examining the skin, a few typical areas of urticaria eruption were found on the abdomen. The wet dressing was continued, calomel given, and the next morning the child was as well as usual.

113 WEST EIGHTY-THIRD STREET.

Painful Paralysis in Children.—Bertrand has recently published his observations on this condition (*Thesede Paris*), of which the following are the features: It generally affects an upper extremity, which is found unexpectedly in a condition of complete paralysis. There is no anæsthesia. The least movement is extremely painful, and makes the child cry loudly. In those cases where a history is obtainable from the parents, the statement is generally made that it came on suddenly and unexpectedly. As is natural, some acute affection of the joints is suspected, but careful examination fails to reveal any such lesion. After twenty-four or forty-eight hours the pain seems less marked, and passive movements can be carried out without much distress. In a few days the child appears to be able to use his arm as usual. The sudden character of the onset and the extreme pain are the striking features. At present we are ignorant of the pathology of such cases, and apparently the prognosis is favorable.—*British Medical Journal.*

Treatment of Tuberculous Cystitis in Children.—In a thoughtful paper upon "Tuberculous Cystitis in Children" Charles Greene Cumston (*Boston Medical and Surgical Journal,*) gives the following outline of treatment: Cod-liver oil, creosote, and tonics are of value, and iodoform in the form of a pill is highly recommended by Guyon and Reverdin. Locally an iodoform or guaiacol emulsion is to be injected into the bladder and retained until expelled. The ulcerations may be cauterized and curetted if they be extensive. Being aware of the favorable results obtained from local applications of lactic acid in tuberculosis laryngitis, the author was led to try this agent in the bladder, and the results obtained in the case reported in this paper would appear to indicate that further use of this substance is justifiable. The indications for suprapubic cystotomy vary according to the end to be obtained. If it is done to bring about a radical cure it should be performed only in cases of primary vesical tuberculosis, and then much can be expected from drainage of the bladder.—*American Journal of the Medical Sciences.*

DEATHS OF CHILDREN UNDER FIVE YEARS IN THE LARGEST CITIES IN THE STATE OF NEW YORK.

BY GEORGE W. GOLER, M.D.,

Health Officer,

Rochester, N. Y.

The appending table shows the percentage of deaths in children under five years of age for July and August, and the percentage of deaths under five years of age for the nine largest cities in the State of New York, for a period of ten years. In nearly all of the cities the rate shows a definitely downward tendency, which may be attributed to the improvements that have been made in the prevention, diagnosis, and treatment of infantile diseases during the last decade, particularly infantile diseases of the digestive and respiratory tract.

Aside from the well-known improvements in method, the results herein shown may be attributed in some measure to the bettered condition of the milk supply in most cities throughout the State. The statute which provided for milk having a definite food value, did not go far enough. While it insured a certain percentage of total solids and fat, it did not recognize the large percentage of dirt found present in the milk.

The amount of dirt in the milk during the summer months, as indicated by the number of bacteria per c.c. found, run from 100,000 to 1,500,000 in a c.c., and among certain milkmen and in grocery milk become too numerous to count.

In our own city an ordinance has been drawn which proposes to limit the number of bacteria to 100,000 per c.c. By the inforcement of this ordinance it is proposed to prevent much dirty milk coming into the city. This ordinance has been decided upon because of the results shown by careful attention to the milk supply during the past three summers. For two years past such an ordinance has been virtually in effect. The milk supply has been carefully observed, milk stations have been established in different parts of the city, where during the months of July and August proper milk of definite composition could be obtained by people for the cost of the milk. The results seem to have justified the work.

	Years.	New York	Brooklyn.	Buffalo.	Rochester.	Syracuse	Albany	Troy	Utica	L.I. City
JULY.	1889	57.7	60.2	59.7	57.2	42.5	45.2	52.8	40.8	59.7
	1890	58.9	62.3	61.1	45.4	51.7	44.5	42.9	47.9	60.0
	1891	59.0	63.0	64.0	42.2	54.6	37.1	54.3	32.8	55.8
	1892	57.1	62.8	56.7	49.6	46.8	53.9	43.0	27.7	59.0
	1893	59.5	61.1	64.2	49.1	48.2	38.0	32.5	43.7	64.1
	1894	56.3	60.1	57.5	39.6	50.0	43.3	48.8	53.6	70.0
	1895	59.3	58.8	58.4	43.2	42.6	35.5	39.6	40.0	62.0
	1896	54.2	59.4	58.4	48.0	39.2	37.4	30.4	43.5	58.0
	1897	54.9	60.6	43.2	26.7	32.8	34.2	33.3	40.0	58.5
	1898	53.8	55.6	49.5	28.5	40.0	35.9	40.0	45.0	37.1
AUGUST.	1889	47.4	51.5	57.3	48.8	39.8	39.1	39.1	38.2	48.1
	1890	48.0	52.5	60.9	52.8	55.7	30.1	39.3	32.6	44.4
	1891	46.8	55.2	57.9	42.9	44.4	34.4	39.3	44.8	51.5
	1892	48.3	55.1	64.8	53.2	41.4	36.0	41.4	51.6	45.3
	1893	47.3	53.3	54.2	44.2	47.3	27.1	39.1	41.4	48.0
	1894	46.9	50.8	84.0	44.8	50.3	52.5	31.9	55.8	49.3
	1895	50.1	53.5	52.4	35.6	49.3	40.0	36.7	28.5	52.8
	1896	40.7	40.9	54.0	28.5	34.4	33.1	27.3	25.3	53.2
	1897	45.4	50.2	53.5	29.5	46.8	27.1	35.8	41.1	37.5
	1898	49.4	54.9	48.1	35.6	40.5	22.2	31.5	40.6	52.2
YEARLY AVERAGE.	1889	42.8	45.0	44.3	34.6	29.1	32.8	36.0	25.6	43.3
	1890	40.8	43.1	44.2	30.2	32.9	28.3	27.4	30.3	42.2
	1891	41.8	43.7	43.2	30.4	28.3	26.9	29.6	25.9	40.4
	1892	41.5	42.6	43.7	34.3	27.8	33.4	30.4	22.4	37.2
	1893	39.2	40.7	42.0	28.3	29.8	26.9	25.8	26.4	40.8
	1894	42.0	42.2	40.8	28.2	30.8	28.6	26.1	27.5	44.4
	1895	41.6	39.5	41.5	24.1	30.0	29.6	26.2	24.5	41.6
	1896	39.7	39.5	38.4	25.6	27.5	26.3	23.6	24.4	40.9
	1897	39.4	37.3	36.1	20.2	27.8	23.9	20.3	27.4	35.6
	1898	38.3	37.3	41.9	21.1	22.5	24.3	24.6	25.6	36.7

THE

ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

OCTOBER, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

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RICKETS.

Rickets is unquestionably increasing in frequency in this country. This opinion has recently been expressed by Rotch and other observers. It is probably not so frequently overlooked as it was in former years, but this does not explain entirely the increasing number of cases seen both in city and country. Dr. Morse in a recent study of the subject concludes that 80 per cent. of the children under two years of the poorer classes of Boston and the adjacent cities have rickets.

Study of the occurrence and distribution of rickets is one of great interest. It is a disease of the temperate zone, being almost unknown in Sweden, Denmark, and the arctic regions and very rare in most tropical countries. In the northern cities of the United States it occurs among every nationality, but is most common among the Italians and Negroes. Its peculiar tendency to occur in Italian children has been particularly studied by Snow of Buffalo. The results of his investigations were reported in the ARCHIVES in 1894, and were very interesting. They seemed to demonstrate that the transplanting of a southern race to a northern climate is a most potent factor in producing rickets.

"The intrusion of a southern race into a northern climate," says Snow, "is an occurrence that has few parallels in history.

It is reasonable to suppose that serious changes in physique seen in the first generation would follow a change of residence from an out-of-door life in a semi-tropical country to the gloomy skies and long winters of the North Atlantic and lake cities. To secure a perfect development of the young of the human species a large portion of the day should be spent out of doors, and, if possible, in the sun. This cannot be accomplished with the children of the city poor, and it is to this lack of pure air and sunlight that we may attribute the spread of rickets in densely populated urban communities. With the first generation of Neapolitans born in American cities, all of the causes of rickets —improper food, bad air, depression caused by infantile maladies—are intensified and accentuated, and the presence of rachitis in seven-tenths of the Neapolitan babies in Buffalo indicates a constitutional deterioration from a great and sudden change in environment."

It should not be inferred that the two races mentioned are alone victims of rickets. No race or nationality escapes in the large towns of America, Great Britain, and Central Europe, but certain races seem to be more susceptible. Among the number are the Jews recently exiled from Russia and Poland.

While race and environment are potent factors in producing rickets, any child subjected for a sufficiently long time to the right dietetic conditions will become rachitic, no matter how wealthy the parents or how favorable the surroundings.

THE ETIOLOGY OF RICKETS.

The actual exciting cause of rickets has not yet been determined, nor has its exact pathology been settled. We know enough, however, about its causes to classify it as a preventable disease. The only exception to this statement, perhaps, is in the case of a southern race transferred to a cold climate, where elements seem to be at work which are difficult to control.

Rickets is essentially dietetic in its nature, though bad hygiene is a very important element in its etiology. It is a dis-

ease of nutrition, complex in nature and not due to a single cause. It is difficult to accept fully the doctrine that it is due to the formation of lactic acid in the digestive tract. If it is granted that this occurs, there are apparently other factors also at work.

Animal experimentation and clinical experience both teach that this disease may result from dietetic errors alone. In many cases this seems to be the only explanation.

The diet which will most certainly be followed by rickets is one deficient in fat. If deficient in proteids, also, the certainty of rickets is increased. If to this deficiency is added an excess of carbo-hydrates, we have the diet *par excellence* for the production of rickets. Such a diet we have in perfection in condensed milk and certain of the proprietary foods. The excess of carbo-hydrates produces fat. Hence, we so often see in children thus fed very striking examples of "fat rickets."

Marked deficiency of fat and excess of carbo-hydrates is certain to produce rickets in any child, even without the assistance of unfavorable hygienic surroundings.

Of the unhygienic conditions tending to produce rickets, lack of sunlight is apparently the most potent. The disease is unknown in India and most tropical countries, even though the children commonly receive inadequate nourishment. They live, however, perpetually in the open air. It is the children in the tenement regions of large cities who suffer most from rickets. In addition to defective diet, these children, confined to dark and unwholesome rooms, are perpetually debarred from sunlight and pure air. Those who might tolerate lesser errors in diet in good sanitary surroundings, will quickly become rhachitic in unwholesome ones.

The surest means of producing rickets in a young child, is to provide a food deficient in fat, and over-rich in carbo-hydrates, and to exclude sunlight and air.

THE EARLY SYMPTOMS OF RICKETS.

Well developed cases of rickets are very easy of diagnosis; mild cases are often overlooked. The country practitioner is particularly liable to allow the early symptoms to pass unobserved. Although rarely fatal, the disease is a serious handicap to an infant and its earliest symptoms should be detected and prompt measures taken for its prevention.

The most constant early symptoms are sweating of the head, and restlessness at night; constipation is the rule. Of the physical signs beading of the ribs is unquestionably the most constant, and, in most cases, a very early symptom. In a recent article in the *Boston Medical Journal*, Dr. J. Lovett Morse reported observations made upon 400 infants under two years of age appearing in an out-patient clinic in Boston. Of these children, 80 per cent. showed more or less signs of rickets.

A rosary was present in every case. Only those enlargements were considered as a rosary which could be felt both parallel and vertical to the long axis of the rib. It was the only symptom in 40 per cent. It was accompanied by but one other symptom in 20 per cent. The single associated symptom was most often delayed dentition, next, enlargement of the cranial eminences. Delayed dentition occurred in more than 50 per cent. Large fontanelle, large eminences, retraction at the diaphragm and enlargement of the epiphyses of the extremities were each present in about 15 per cent. but were symptoms of later development. Marked rhachitic deformities were rare.

From observation of healthy children as well as diseased, Dr. Morse is positive in his belief that a rosary is not a normal phenomenon, but is an evidence of rickets. Although this belief is not held strictly by some pediatric writers, there can be no question that a rosary is so extremely uncommon in other conditions that its presence, particularly if associated with other symptoms, is pathognomic of rickets.

Delayed dentition is usually enumerated among the symptoms of rickets, and justly so. If unaccompanied by other symp-

toms, however, it cannot be considered as positively indicative of that disease, for it may result from other abnormal conditions.

The symptom complex of early rickets and of mild rickets would seem to be as follows: sweating of the head, usually accompanied by restlessness and constipation; the presence of a rosary; delayed dentition.

THE PROGNOSIS OF PHYSICAL ABNORMALITIES OF CHILDREN.

In a series of investigations upon 1,000 children recently made by Dr. Ales Hrdlicka, reference to which has already been made in these pages, especial attention is devoted to the changes which are likely to occur in various abnormalities. His observations show that certain abnormalities will increase in frequency with the age of the children. Such is the case principally with many of the abnormalities of the cranium, such as asymmetries of the head and depressions or elevations along the sutures. Asymmetries of the face are generally well defined during childhood, and it is not certain whether or not there is any increase in their proportion with age. Abnormalities of the ears become more marked and also increase somewhat in proportion from infancy onward. All the habit abnormalities tend to increase in proportion as we advance from early childhood. After the age of fifteen or sixteen these abnormalities tend again to diminish, a certain proportion of them being spontaneously corrected. Irregularities of the palate increase with age. About those of the uvula the author is uncertain though they also seem to increase in frequency with age. Certain abnormal gums do not become manifest until after the subject has reached a certain age. Such is principally the polygonal gum. Prognathism of the gums is also not marked in early childhood; it begins to show from the fourth year of childhood onward, not attaining its ultimate degree until adult life.

The genital organs deserve special mention. Certain abnormalities of these organs in the male, principally adhesions of

the prepuce, diminish very rapidly after the puberty period. Other irregularities, principally those of the size of the organs, become more manifest as the child grows older. The descent of the testicles will be occasionally found to be retarded in young boys; it will generally be accomplished before the age of puberty.

A certain number of abnormalities, almost all of which are of congenital origin, do not change in proportion with the age of the children. Such characters are the different abnormalities of the toes, the additional whirls of hair, etc. Almost all of these characters, however, become better differentiated and more pronounced with the age of their bearers.

ANOTHER ADVANCE IN SECURING PURE MILK FOR CITIES.

In the short paper by Dr. Goler in the present number, a very important item will be found relative to improving the milk supply of cities. It appears that in the city of Rochester an ordinance has been drawn which proposes to limit the number of bacteria in milk brought into that city to 100,000 per cc. The enforcement of such an ordinance will certainly prevent the admission of much foul and dirty milk. The number of bacteria found in milk is an excellent indication as to its cleanliness and wholesomeness as an article of diet. It is not alleged in any quarter, we understand, that milk containing the number of bacteria allowed by this limit, is a safe food for the use of invalids and infants without pasteurization, but such a requirement will certainly exclude a vast amount of filth from a very important article of diet. It cannot fail to materially improve the milk supply, and is a decided point gained in the hard fight that is being made to secure purer milk for American cities.

THE PREVENTION OF BLINDNESS.

That the frightful scourge of blindness might in many cases be prevented is a fact too well established to require discussion.

In a recent paper read before the State Medical Society of New York, Dr. Lucien Howe discusses methods of prevention. He favors strongly the enactment of laws which, no doubt, would accomplish much toward that desirable end.

In the course of his paper he mentions a fact of great interest and importance, and supports it by statistics. That fact is that blindness is more relatively common in country districts than in the cities. Coupled with this fact is the important one that Crede's method is employed far less frequently in the country both by private practitioners and public institutions. The city practitioner has the fear of sepsis and infection always in mind, and is more ready to use preventive measures than his country brother. The sources of infection are certainly far less in number and potency in the country than they are in the crowded city.

The fact that blindness is more common in the country proves almost certainly that purulent ophthalmia is more common. But purulent ophthalmia is a preventable disease. We have frequently pointed out in these pages the methods of prevention and urged their adoption. The briefest study of statistics shows their necessity. The country practitioner should not pass the subject lightly by, feeling that it is only his city brother who should take these precautions.

Orthoform and Aneson in Painful Mouth Affections of Children.—Göppert (*Jahrbuch f. Kinderheilkunde*, 1889, Heft 1) has used both these drugs with satisfactory results as a local sedative in painful mouth affections of children. The anæsthetic effect lasts about an hour and a half, and the application is best made about twenty minutes before eating. Aneson is applied by means of a wad of cotton to the inflamed mucous membrane, and orthoform may be dusted on by the powder-blower. Both drugs have an unpleasant taste, especially the orthoform.—*American Journal of the Medical Sciences.*

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Traité des Maladies de l'Enfance. *Par* Jules Comby, *Médecin de l'hôpital des enfants malades. Troisième edition, revue et considérablement augmentée.* Paris: J. Rueff. 1899.

In this third edition, Comby's book has been greatly enlarged and revised. It is based upon clinical studies extending over fifteen years in dispensary and hospital practice. After a very brief introductory chapter on the physiology, hygiene, and therapeutic considerations of infancy, the book is divided into two parts, dealing with general and local diseases respectively. The general division includes the infectious diseases, and the dystrophies, both inherited (diatheses) and acquired. All the anæmias, athrepsia, dentition, scorbutus, and rickets, are classified as acquired dyscrasias. In the second division the organic diseases are grouped, including chapters on the diseases of the ears, eyes, and skin. An appendix treats briefly of such disorders of the fœtus and newly-born as are not mentioned in the other chapters. The author frankly states that he does not pretend to have found an irreproachable classification. It is certainly not a very satisfactory one. It is difficult to understand, for instance, why the subject of onanism should be discussed under the head of genito-urinary diseases, and tuberculosis of the cranial bones under the nervous system.

The chapter on diseases of the lungs is one of the most satisfactory in the book, especially the sections on broncho- and lobar pneumonia. In the treatment of the former, isolation and antisepsis are insisted on as the basis of prophylaxis. The pathology and bacteriology are also good. Throughout the rest of the book these are often insufficient, and in the case of the gastro-intestinal diseases not up to date. The pathology, particularly, is inadequate for a modern book. In most parts of the book the treatment is so antique and peculiar as to be of little value to the American practitioner.

The cases of tuberculosis emphasize the fact that the infection occurs most frequently through the respiratory tract in children. Among twenty-eight patients under two years of age, the mediastinal lymph nodes were affected twenty-eight

times, and the lungs twenty-one times; the liver and spleen were involved in thirteen cases, the intestines in eight, the kidneys in four, the meninges in three, the heart in two and the stomach in three. The intestinal lesions are subordinate to those of the lungs, and usually due to infection by the swallowed sputum; in the other organs the lesions are caused by infection through the blood current.

Malaria is rare in Paris, and the fever is apt to be remittent rather than intermittent, the tertian and quartan types being very rare; cachexia develops rapidly. In discussing the diagnosis, stress is laid upon its difficulty in young children, and the necessity of knowing the history of the case, and of giving quinine in doubtful cases both for its diagnostic and therapeutic value. Strange to say, examination of the blood is not mentioned—the one really diagnostic sign.

The print of the book is exceptionally good throughout. There are no illustrations, and the index is clear and complete. At the end is given a list of other books and articles written by the author, to the number of 222.

Thyroidism in an Infant from Administration of Thyroid Extract to the Mother.—Byrom Bramwell (*Lancet*). A woman, aged thirty-four, nursing a child aged six months, had exophthalmic goitre, which had developed immediately after she was confined, possibly from worry on account of the child having club feet. On December 24th, thyroid extract (two five-grain tabloids daily) was administered to the mother. On January 1 the child had been sweating profusely for several nights. It was looking ill and was sleepless. It had vomited every morning for three days. The question arose whether the symptoms were due to the extract. It was consequently stopped for five days. The child immediately improved, was much less restless, slept better, sweated less, and did not vomit. On January 4th it was quite well. On the 9th thyroid extract was again given to the mother. The next day the child vomited, was restless, did not look well, and sweated profusely. The thyroid extract was consequently stopped. On the 12th the child was well again. On the 13th two tabloids of thyroid extract were again given to the mother. On the 14th the child was again sick, looked ill, sweated profusely, and was restless at night. On the 15th the child was weaned, and after this remained perfectly well.—*Medical and Surgical Review of Reviews.*

Current Literature.

MEDICINE.

Medin: The Acute Stage of Infantile Paralysis. (*Archives de Méd. des Enfants.* Vol. i., No. 546.)

Sixty-four cases of infantile paralysis were studied in Stockholm during two epidemics occurring in the years 1887 and 1895. Twenty patients were under one year old, five under six months, the oldest was eight years. Boys are affected a little more often than girls, and the season when the greatest number of cases occur is at the end of summer and the early autumn. With three exceptions the children were all in excellent health at the time of the attack, and no predisposing cause like cold, dentition or heredity could be discovered. The direct cause is probably a bacterium, and the disease undoubtedly is contagious. Fever was usually marked at the outset, with somnolence and hyperæsthesia; convulsions were rarely seen, nor true contractures. The paralyses were localized as follows: lumbar spinal, 32; cervical spinal, 5; complete spinal, 4; lumbar and abductor, 1; lumbar and oculo-motor, 1; complete and facial, 1; complete, facial and oculo-motor, 1; facial monoplegia, 3; complete special and bulbar, 2. The vagus was involved in one case, and a polyneuritis occurred eight times, polioencephalitis five.

As to prognosis, the lumbar poliomyelitis is most grave, because it is more apt to be followed by permanent paralyses; the cervical cases less so. Three cases ended fatally, autopsies being obtained in two. The lesion found was an intense inflammatory process in the anterior horns of the spinal cord, emanating from the blood-vessels, and secondary degeneration in the motor nerve fibres. For treatment in the acute stage, morphine is sometimes necessary for the pain, and chloral hydrate is effective for the convulsions. No local treatment is possible on account of the hyperæsthesia.

Richardiere and Tollemer: Researches on the Presence of the Diphtheria Bacillus in the Air of the Ward for Diphtheria Cases. (*Gazette des Maladies Infantiles.* Vol. i., No. 10.)

Experiments were made by exposing bouillon in flasks and serum in Petri plates to the air of the diphtheria ward at a time when there were about fifteen patients there, and the

room had not been disinfected for several weeks. Klebs-Loeffler bacilli were demonstrated, as well as pyogenic cocci and bacteria of putrefaction. The diphtheria bacilli proved virulent when inoculated into guinea-pigs. A second series of examinations, made after thorough disinfection of the ward, and before the patients had been returned to it, showed that no diphtheria bacilli remained.

It becomes evident, then, that frequent disinfection of wards for contagious diseases is a necessity, and that the isolation of such cases is imperative; also that care should be taken to remove the dust from the rooms daily and very thoroughly.

Starck: The Significance of Enlargement of the Spleen in Rachitis. (*Archives für Kinderheilkunde.* 1899. B. xxvi., H. i., ii.)

Among one hundred rachitic children the spleen was found enlarged sixty-eight times. There was no relation between the bony changes and the size of spleen. The size of the spleen corresponded with the degree of anæmia present, and was found the largest in the so-called pseudo-leukemia infantum. The author found the spleen enlarged in over one-half of the autopsies in rachitic subjects. The spleen in these cases showed nothing characteristic, either to the naked eye or in the use of the microscope.

At first the enlargement is due to an increase in the pulp, later the connective tissue changes occur. While the author does not believe that the splenic tumor should be looked upon as a symptom of rachitis, he holds that it may possibly be due to an unknown poison which is produced as a result of the rachitic condition.

Sbrana: Typhoid Fever in Children in a Warm Climate. (*Archives de Méd. des Enfants.* Vol. ii., No. 1.)

The observations were made in Tunis, seventy-two cases being studied in children from sixteen months to ten years of age. Boys were affected more often than girls, and the death rate was 11 1-10 per cent. The disease lasted from twelve days to one month. Relapses occurred in six cases. Widal's serum test gave almost uniformly positive results, but in the benign cases the reaction developed very slowly. The temperature was never noted to be over 40, 50 C, was well borne, and fell by lysis. Epistaxis was present in 50 per cent. of the cases, but

intestinal hemorrhage did not occur at all. As complications there were: three cases of meningitis, two of suppurated parotitis, one of peritonitis following perforation in a girl of ten years, one of purulent pleurisy, five of aphasia, one of dilatation of the stomach during convalescence, and one of orchites, also during convalescence.

Garrett, G. C., and Washbourn, J. W.: A Systematic Bacteriological Examination of the Fauces in Scarlet Fever as a Means of Preventing Post-Scarlatinal Diphtheria. (*British Medical Journal.* 1899. No. 1998.)

In hospitals for infectious diseases patients convalescing from scarlet fever are not infrequently attacked with diphtheria. The cause of this has been the subject of considerable discussion; but a prevalent theory is to attribute it to the introduction into the scarlet fever wards of unrecognized cases of diphtheria. If this view be correct, it follows that post-scarlatinal diphtheria could be prevented by the early recognition and isolation of such cases. The great difficulty encountered is that the clinical diagnosis of diphtheria is often impossible, especially in patients who are in the acute stage of scarlet fever.

The only other method available for the recognition of the disease is the detection of diphtheria bacilli in the fauces by bacteriological examination. It has, however, been urged that diphtheria bacilli are so frequently present in the throats of scarlet fever patients as to render the isolation of such cases impracticable. F. Ranke found diphtheria bacilli present in the throats of 53.7 per cent. of scarlet fever patients in Munich. Goodall made a bacteriological examination of 87 cases of scarlet fever admitted into the Eastern Fever Hospital. The examination was made immediately after admission. In 6 diphtheria bacilli of the long variety were found, and in 13 bacilli of the short variety.

The cases with bacilli were mild, and would not have been recognized clinically as diphtheria. One of the cases with the long variety of bacillus subsequently developed post-scarlatinal diphtheria, and so did 4 other cases in whom no bacilli were found on admission. Sverensen examined 1,547 scarlet fever patients on admission into the fever hospital at Copenhagen, and found diphtheria bacilli in 2.5 per cent.

Beggs found diphtheria bacilli in the throats of 51 out of 140

cases of scarlet fever examined, but the examination was made at various periods after the admission of these patients. Moreover, post-scarlatinal diphtheria was at the time prevalent in the wards, and 14 out of the 51 cases exhibited clinical evidence of the disease. The difference in the results obtained by these observers may, perhaps, be partially explained by the inclusion by some and the exclusion by others of Hoffman's bacillus.

In consequence of an outbreak of post-scarlatinal diphtheria in the London Fever Hospital during the winter of 1895-96, which necessitated the closing and disinfection of some of the wards, it was decided in March, 1896, to examine bacteriologically the throats of all scarlet fever patients then in the hospital, and of all new cases on admission; of the former, those in whose throats diphtheria bacilli were found were isolated.

The present communication is a record of the examination in this way of all cases of scarlet fever admitted since the above date, the object being to determine, first, the frequency of the occurrence of diphtheria bacilli in the throats of scarlet fever patients; and, secondly, the possibility of preventing post-scarlatinal diphtheria by the isolation of those cases in whose throats these bacilli are found. The cultivations were made upon Loeffler's blood serum, and were examined microscopically on the following day.

In considering the results, three points of interest appear:

1. Bacilli resembling the diphtheria bacillus in morphology were found on admission in the throats of only 1.2 per cent. of our cases.

2. Only a minority of these cases presented clinical evidence of diphtheria.

3. The presence of Hoffman's bacillus in the fauces did not appear to play any part in the causation of diphtheria.

After reviewing the evidence obtained, and studying the evidence shown by numerous tables, the authors draw general conclusions to the effect that post-scarlatinal diphtheria is due to the introduction of unrecognized cases of diphtheria into the scarlet fever wards, and that this can only be obviated by systematic bacteriological examinations of all cases on admission, and by separation of those in whose throats diphtheria bacilli are found.

If Hoffman's bacillus, which is believed to have no direct causal connection with diphtheria, be excluded, the number of

such cases, though probably greater among patients more liable to double infection than ours, should not be beyond the isolation resources of most fever hospitals; moreover, absolute isolation does not appear to be essential.

Further, the authors think that some supervision of cases of rhinitis with diphtheria bacilli in the nose should be practised, such as keeping them in bed while the discharge continues; for though these cases do not appear to have given rise at the London Fever Hospital to faucial or laryngeal diphtheria, yet such an occurrence is quite possible.

HYGIENE AND THERAPEUTICS.

Report of the Committee of the Clinical Society on the Antitoxin Treatment of Diphtheria. (*Translations of Clinical Society*, London. 1898. *Medical Chronicle.* 1899. 3d Series. Vol. i., No. 1.)

This report gives a concise and clear account of the beneficial effects of the use of antitoxin in diphtheria, and cannot fail to make all who read it, recognize the imperative duty of injecting the serum, as soon as the diagnosis of diphtheria has been made.

The report is made upon 633 consecutive cases (not specially selected), with the necessary requirements that there must be satisfactory evidence of the existence of true diphtheria, and a statement of the number of units of antitoxin used.

Of the 633 cases, 124 were fatal, *i.e.*, 19.5 per cent., and if 15 cases dying within twenty-four hours are excluded the mortality is reduced to 15.6 per cent.

With this result are compared 448 unselected cases not treated by antitoxin, amongst which 150 proved fatal, giving a mortality of 33.4 per cent.

Another non-antitoxin series is also contrasted by picking out in each, the cases in which the larynx was affected, when the mortality in the antitoxin series was found to be 23.6 per cent. whereas, for the non-antitoxin series it was as high as 66.6 per cent., the most marked diminution in the percentage mortality being during the first four years of life, and similarly where tracheotomy became necessary, a mortality of 71.6 per cent. in the non-antitoxin cases was reduced to 30 per cent. in the antitoxin cases. The report states that this diminution of the

mortality after tracheotomy probably constitutes the most direct proof of the efficacy of the remedy.

The report strongly emphasizes the necessity of injecting the serum early, as a steady rise in the mortality is observable with each postponement of the day of injection during the first five days.

In drawing attention to the extreme rarity of an extension of the membrane to the larynx after the administration of the antitoxin, it also points out that when the administration is performed during the first three days in cases needing tracheotomy, the mortality is as low as 16.1 per cent.

In considering the question of post-diphtheritic paralysis, the report states that it was present in 145 cases, *i.e.*, 22.9 per cent. In 110 of these it was only slight (*e.g.*, paresis of the palate and an ocular muscle), and of the 35 cases in which it was severe, in 33 the injection had taken place between the third and eighth day of the disease, whereas only 1 severe case was noted out of 112 cases treated on the first and second days.

In the non-antitoxin series the paralysis rate was found to be 10.8 per cent. But as the report states, 16 cases were included in the 633 on the ground of paralysis occurring, and if these be deducted, the rate falls to 19 per cent. Moreover, it is to be remembered that the duration of life is shown to be markedly prolonged in the antitoxin cases, and the longer the cases survived the heavier was found to be the incidence of the paralysis.

Finally, the mortality from paralysis in the non-antitoxin series was 12.2 per cent., whereas in the 633 treated by antitoxin it was 8.9 per cent.

Of the untoward consequences following the injection of the antitoxin, the report states that there was no evidence of any prejudicial effects on the kidneys, whilst in 34.7 per cent. a rash was noticed, generally either a simple erythema or urticaria, and in the majority of these cases accompanied by pyrexia. Occasionally pyrexia was observed without other signs. The rash, in by far the larger number of instances, appeared on the eighth day, being seldom seen before the sixth and rarely after the eighteenth.

The appearance of the rash was not found to have any relation to the amount of antitoxin injected.

In 40 of the cases there was pain in or about the joints, and

a very marked increase in the frequency of the supervention of these pains was seen in those which received the largest doses.

No definite conclusion could be drawn as to the advantage of administering the whole of the antitoxin within forty-eight hours of the first injection, or continuing it for a longer period, and it is to be regretted that no mention is made of the number of units which it is advisable to use in different cases. Seeing, however, that even when used in very large doses no serious ill effects have followed the injection of antitoxin, and that the number of fatal cases is less when antitoxin is used early, it would seem to be well to err on the side of an overdose at the first injection.

SURGERY.

Dowd, Charles N.: Tubercular Cervical Lymph-Nodes. A Study Based on Thirty-six Cases Submitted to Operation. (*Annals of Surgery*. 1899. No. 5.)

Tuberculosis of the cervical lymph-nodes is said to be the most common form of tuberculosis among children. The age of greatest frequency is between the third and tenth years. In older children and adults the disease is not uncommon. In infants it is uncommon.

ANATOMICAL ARRANGEMENT OF CERVICAL LYMPH-NODES.—The neck is richly supplied with lymphatics, both superficial and deep. As seen by the surgeon, they are naturally grouped into two main chains, the anterior and posterior. The anterior chain accompanies the internal jugular vein. The nodes at its top are in close communication with the pharynx, and usually can be palpated when acute pharyngitis or tonsillitis exists. The submental and submaxillary groups communicate with it from in front, and above it there are a few superficial nodes over the parotid, which are very rarely involved in tubercular inflammation. The posterior chain includes both superficial and deep nodes, and runs downward and slightly backward from the region of the mastoid. Near its top, under the sterno-cleido-mastoid muscles, it is in close communication with the anterior chain. The arrangement of lymph-nodes in the posterior chain is not so regular or well defined as in the anterior chain.

PECULIARITIES OF TUBERCULAR INFLAMMATIONS IN CERVICAL LYMPH-NODES.—When the cervical nodes are tubercular both chains are

usually more or less involved, those near the pharynx are usually larger and in a more advanced stage of inflammation than those below. It is not uncommon to find two or three of the upper nodes in a condition of advanced cheesy degeneration, and the lower parts of both chains less and less inflamed, until at their lower ends no inflammation can be detected.

The type of inflammation is generally slow, but differs greatly in different individuals. Some constitutions seem to have the power of successfully battling with tubercle bacilli, and some bacilli are less virulent than others, hence the lymph-nodes may become walled in by fibrous tissue, and may exist in this condition for years, remaining apparently quiescent or even undergoing calcareous degeneration. These are analogous to the tubercular bronchial lymph-nodes which have been found by many observers in autopsies on patients who, during life, had given no symptoms of tubercular disease. They may, however, suddenly become inflamed and suppurate; and in operations on such cases one finds a matting of fibrous tissue so dense about the nodes that it is difficult to define their boundaries.

On the other hand, some constitutions show little ability to cope with tubercle bacilli, and in them there is a rapid spread of the inflammation from node to node, so that shortly after the first infection there are small nodules very widely disseminated. In operating on such cases one finds the nodes soft and very loosely held by their capsules, with no apparent fibrous tissue about them. On section of the nodes their structure appears pinkish gray, soft, almost homogeneous, with no cheesy or calcareous spots. The tendency of the disease in these cases is to spread rapidly. The axillary nodes soon become involved, and there is a strong tendency to the spread of the disease to other parts of the body.

Between these two types there are all grades of variation. If left alone the tendency of the nodes is to break down, open through the skin, and discharge their contents. This process is slow; one node after another discharging its contents during months or even years, and leaving unsightly scars.

Sometimes the tubercular inflammation extends to other organs. Although it is often stated that general or pulmonary tuberculosis seldom result from tuberculosis of the cervical lymph-nodes, the reports of various observers indicate that such infection does occur in a large proportion of cases. The pro-

portion is probably larger than the reports indicate, as the symptoms may occur after the making of the report. Clinicians of large experience with phthisis state that it is not uncommon to find phthisical patients who in their childhood had had diseased lymph-nodes.

ETIOLOGY.—The most common point of infection is believed to be the pharynx, which is so prone to inflammation in children as shown by pharyngeal adenoids, hypertrophied tonsils, chronic pharyngitis, etc.

Nicoll has investigated this with great care. He studied 500 cases with reference to their etiology, and found that the enlargement was usually first noticed at the upper part of the carotid sheath, near the bifurcation; that the deepest nodes involved were post-pharyngeal; that in 70 per cent. of the cases the disease was bilateral, and that the swelling would come and go with fresh attacks of catarrh. He believed that the swelling was at first a simple hypertrophy, and that the tubercular inflammation was added at a later period, but he found tubercle bacilli in small nodes recently involved, and hence concluded that the process was often tubercular from the start.

He also found that a considerable number of tonsils and pharyngeal adenoids, which he removed, contained tubercle bacilli embedded in the tissues among the lymphoid cells side by side with other organisms, even when there was no gross appearance of tuberculosis.

Stark considers carious teeth the most common source of infection, and in two instances has found tubercle bacilli in the carious teeth and in the lymphatics leading from them. In such instances, however, the submaxillary nodes should be the first ones infected, and clinically this does not often occur.

Milton, with an experience of nearly 1,000 cases in Egypt, considers vermin in the head a most important exciting cause; he has seldom seen the disease in boys and men who shave the head from time to time, but has found it very common in girls who, according to the custom of the country, abstain from washing.

Eczema, rhinitis, otitis, or any inflammation about the head, may occasion enlarged cervical lymph-nodes, and they may become tubercular; but those which are in close communication with the pharynx are usually the first ones affected, and it is fair to believe that the pharynx is the most common site of infection.

DIAGNOSIS.—The diagnosis of this condition is not always easy. Inflammations of the cervical lymph-nodes frequently follow the exanthemata, pharyngitis, tonsillitis, diseases of the scalp, and other infections. These ordinarily run an acute course; when the deep nodes are involved, a phlegmon results which is easily distinguished from tubercular inflammation; when the superficial nodes are involved, small abscesses may result or an inflammation which soon subsides. Hence, if a case can be kept under observation for a time, the diagnosis between tubercular inflammation and acute infection by pyogenic bacteria is usually made with ease. There are, however, a few instances of chronic enlargement of the lymph-nodes which are most difficult of diagnosis—cases in whom the nodes are not greatly enlarged, nor is there any appreciable changes in their size from month to month, and little or no pain. A large proportion of such cases is without doubt tubercular; in some there is a slight inflammation somewhere about the head which is the exciting cause. Volland estimates that 68 per cent. of all enlarged cervical lymph-nodes are tubercular. Nicoll estimates the number as 80 per cent.

TREATMENT.—The condition of the general health is important and should be attended to no matter what else we do. Tonic and hygienic measures may be employed until the diagnosis is established, or until it can be determined whether the disease is advancing or not. It is to be remembered that one can remove the inflamed lymph-nodes in a short time without much danger and without much suffering, and most cases are best treated in this way. There are numerous reports of long series of operations without fatality or serious accident. The advantages of operation as compared with those of expectant treatment, or the incision of separate nodes, as they become softened, are that we substitute a rapid removal of the nodes for a process of slow discharge, which consumes years, we diminish the likelihood of general tubercular infection, and we leave scars which are far less unsightly.

The author's cases, upon which this paper is based, number thirty-six, operated upon within the last five years by operations which were as complete as was practicable. The effort was always made to remove all the affected nodes, but in a few cases, in poorly-nourished children, where abscesses existed it was not deemed wise to do as extensive operations as would otherwise have been done.

The cases have been followed with much care, but most of them have been operated upon within the last two years; two have died of intercurrent disease, and some others could not be traced, hence there are only eleven who have been followed for more than two years; of whom six are apparently cured, three have small nodules which seem to be quiescent, and two have disseminated nodules. Rather than attempt to draw statistical conclusions from cases so few in number and so recently operated upon, it seems to the author better to reserve such a study for a later time; and now to call attention to the immediate effects of the operation and to the differences in prognosis which seem to belong to the different types of the disease.

There were no deaths, and the patients were all decidedly benefited by operation. The wounds healed within periods which varied according to the conditions of the nodes and the tissues about them. When the nodes are not broken down, primary union may be expected; from one case more than fifty small nodes were removed, and he left the hospital in eleven days with wounds healed. Primary union may sometimes be obtained in cases where the nodes have broken down; for instance, from one case large masses of lymphomata were removed, many of them containing much pus or more properly liquid tubercular detritus. The small drain which was inserted at the time of operation was removed in two days, and healing promptly followed. At a later time, however, a small sinus opened at the lower end of the incision, and remained in a sluggish condition with slight discharge for several weeks. Where there are broken-down nodes we may expect more or less delay in the healing.

Power, D'Arcy and Parsons, A. C.: A Case of Cystic Disease of the Breast in a Boy, aged Three Years. (*British Medical Journal*. 1899. No. 2000.)

The patient a healthy-looking boy of three years, was brought to the hospital on December 22, 1898. According to his mother's account he had always enjoyed good health. Eighteen months previously she noticed that the left breast was fuller than the right, and since that time it has been slowly getting larger. There was never any pain in the breast or any discharge from the nipple.

On examination there was felt in the left breast a soft round

tumor about the size of half a tangerine orange. It appeared to be cystic in character and adherent to the skin. The nipple was normal and there was no "dimpling" over the tumor. No edge could be made out, and there were no enlarged glands in the axilla; no tenderness on palpation.

An elliptical incision was made in an oblique direction across the tumor which included the nipple, and extended as far as the anterior border of the axilla. The tumor was dissected away with the overlying skin. All the gland tissue was then removed together with a portion of the fascia covering the pectoral muscles; no glands were seen. There was very little bleeding; but even when the main tumor was removed by incisions carried widely upon each side of it, many small cysts were cut into as they lay in the surrounding connective tissue. The wound was then sewn up with silkworm gut and a drainage tube inserted for twenty-four hours. Stitches were removed on the tenth day, and the wound healed by first intention. Macroscopically the larger tumor was seen to consist of a simple cyst about the size of a walnut, partially subdivided into smaller loculi by incomplete septa. The lining membrane was smooth, and the cyst contained a clear yellow fluid.

The case was interesting both on account of the sex and youth of the patient, for it is rare to find cystic disease of the breast in so young a boy. It was thought better to remove the whole breast rather than to incise the main cyst because the gland was functionless, because the scar would be less perceptible, and because the cysts were so numerous that it was impossible to get rid of them otherwise.

Shepherd: Hare-lip and Its Treatment. (*Montreal Medical Journal*. 1899. Vol. xxviii., No. 1.)

Hare-lip then is a congenital affection and often is due to heredity. There are various forms of this deformity:

1. Simplest, merely a notch in the red edge of the lip.

2. Through the soft parts only and not going through to the nostril.

3. The cleft through the lip and nostril and accompanied by cleft palate.

Double hare-lip, with a floating intermaxillary bone and cleft palate, occurs in $\frac{1}{10}$ of all cases.

There are other forms of deformity connected with arrest of

development of face, such as enlargement of mouth, a persistence of the lachrymal groove, etc.

Single hare-lip is usually on the left side, and is always to one side in the line of the junction of the intermaxillary with the maxillary bone. The child who suffers from this deformity, as a rule, cannot suck and has to be fed with a spoon. The mother's milk should be drawn and used as food for the child. Some advocate injecting the milk into the pharynx with a glass syringe, to which is attached a piece of rubber tubing. Sometimes a stoppered bottle with a large teat, having the aperture below, is useful. Rubbing the child with cod-liver oil or olive oil, if it is puny, may help to keep it in condition until old enough for operation. Artificial foods should not be given unless under dire necessity. The child should be kept warm in flannel.

BEST AGE FOR OPERATION.—This depends on the condition of the child and the character of the deformity; should the deformity involve only the soft parts and the child be healthy, operate at once for the mother's sake and in order that the child may suckle. In simple cases the earlier the operation the better. The only danger in early operations is from hemorrhage, young children do not stand the loss of blood well. On the other hand they soon make up lost blood. Should the child be weakly, or the fissure be double and extend through the hard parts, then the operation ought to be postponed some weeks or even months. From six weeks to three months is probably the proper time for operating. The author prefers the age of six weeks, this is well before dentition has commenced. Some advise waiting in the difficult cases until the child is weaned, but this is keeping a deformity before the family too long, and furthermore it renders the success of the operation more difficult.

OPERATION.—The number of operations devised for the relief of this deformity are many and varied. The ingenuity of surgeons is taxed more by these plastic operations than by any others, and the number of methods is only equalled by the great variety of procedures advocated by the gynecologist in sewing up the abdominal wound.

The author describes at considerable length the operation which he performs for single hare-lip of which the following are the most important points:

1. Freeing the lip from the gum. 2. A free sacrifice of the edge of the cleft. 3. Accurate apposition of the parts.

McGuire: Appendicitis in Children. (*International Medical Journal*, 1899. Vol. viii., No. 4.)

In a paper read before the Virginia Medical Society, the author reports 9 cases of appendicitis in children, surgically treated, occurring in children from four to eleven years of age, with 2 deaths. The deaths occurred in cases markedly septic and practically moribund. He remarks that many cases ending in resolution are overlooked previous to the last five years; the symptoms being those of acute intestinal indigestion. The physician who looks and waits for typical symptoms of appendicitis will frequently err in diagnosis. The intensity of an individual symptom, which is easily misleading, is more marked in children than in adults. Pain is an especially misleading and variable phenomenon, which does not indicate the pathologic condition, maybe intense, as in a case of slight catarrhal appendicitis, and absent in the gangrenous form. Tenderness may be altogether absent, especially where there is gangrene, because the tissues, nerves and all, are practically dead; and it may vary most widely as to situation. Nausea is usually a more prominent symptom in childhood than in the adult; is not continuous, and, where it occurs in an acute form later in the disease, often marks the advent of perforation and the onset of sepsis. Fever is usually present, and is liable to be higher in the slight catarrhal forms, and to be absent, or subnormality may exist, in the more serious form. He lays great stress upon the facial expression, especially as indicating septic peritonitis. A potent fact in dealing with children is that an acute peritonitis very rarely occurs in them from any other cause than appendicitis. The same holds good in the adult male. McGuire claims that no case should be abandoned by the surgeon, because, though the case may die and impair his statistics, nevertheless, some hope always exists of recovery, and every possible chance should be furnished. The surgeon who operates on a case of extreme gravity, and saves the patient, deserves far more credit than the operator who saves nineteen out of twenty simple cases.

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Original Communications.

SOME CLINICAL FEATURES OF RHEUMATOID ARTHRITIS.*

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Although rheumatoid arthritis and allied affections are frequently seen by orthopedic surgeons the Transactions of the American Orthopedic Association do not present a paper on this subject.

More or less confusion also exists in the classification of these ailments in the majority of text-books, as they are put with rheumatic and gouty troubles, to which they are not allied, either in their symtomatology or in treatment. Again we find the periarticular variety which is the usual one seen in childhood, before the second dentition, used synonymously with arthritis deformans, which is secondarily at least an osteitis, a formative osteitis, which we see in the majority of cases in old people.

Of the disease known as arthritis deformans, Charcot makes division of the cases into Heberden's nodosities, the general progressive form (which may be seen in childhood), and the partial or monoarticular form.

Still divides the general progressive form seen in children into the periarticular, and into what might be termed the osseous form, which can truly be called arthritis deformans. In the periarticular, Still first called attention to the enlargement of the lymphatic glands and spleen associated with the articular changes.

There is a third affection, according to Still, seen in children and extremely rare, which Jaccoud called attention to in 1871,

*Read before the American Orthopedic Association at the Thirteenth Annual Meeting, New York, June 2, 1899.



RHEUMATOID ARTHRITIS—SKIAGRAPH SHOWING THE HANDS OF THE PATIENT, E. C.



ARTHRITIS DEFORMANS—SKIAGRAPH OF THE HAND OF AN ADVANCED CASE, SHOWING THE DIFFERENT OSSEOUS CONDITIONS OF THAT DISEASE AND RHEUMATOID ARTHRITIS.

and which he termed chronic fibrous rheumatism. The affected joints showed firm thickening, an extra-articular fibrous hyperplasia with fibrous nodules present.

From a study of the literature, and our own cases, we have arrived at a classification, which we think will meet the clinical, and pathological findings of the majority of chronic bony changes of this character, as follows:

1. Rheumatoid arthritis.
2. Chronic fibrous rheumatism, a sequela of subacute attacks of articular rheumatism.
3. Arthritis deformans, the general progressive form of Charcot.
4. Osteitis deformans of Paget.
5. Heberden's nodosities.
6. Partial or monoarticular deformans.

Of the six classes, a few types of but the first three have been reported in childhood, and these but rarely, especially may this be said of arthritis deformans.

Osler reports having seen but five cases of arthritis deformans in children, three of the cases only presenting themselves at his clinics in six years at the Johns Hopkins Hospital.

Koplik has reported one case of the same, and Henoch only five and ranks them as the rarest form of joint affection in children. Koplik states there are only eighteen cases in children of the classical arthritis deformans in the literature, that is including those causing only partial disability, and ankylosis, so that we can infer from this that some of these cases may fall in the category of rheumatoid arthritis. The Charcot type of arthritis deformans must be bilateral in its invasion of the joints, cause enlargement of the ends of the bones, together with the effusion into the joints, and deformity. In one of Osler's cases reported at length only one elbow, one knee, both feet and the cervical spine were involved, the liver was a little enlarged, and the spleen was just palpable.

Taking up then our separate classes we find the following points of distinction:

RHEUMATOID ARTHRITIS.

Rheumatoid arthritis occurs more frequently in girls than in boys, before the second dentition and attacks the periarticular tendon sheaths, capsules and synovial membranes. It is usually

bilateral in its distribution. It rarely, if ever, exhibits any abnormality in the bones or cartilages and has further as a distinguishing feature the enlargement of the lymphatic glands and the spleen, which is not seen in arthritis deformans. The onset is usually gradual with pain and stiffness complained of in one or more joints, which gradually become enlarged, and the adjacent muscles undergo atrophy; then other articulations become involved.



RHEUMATOID ARTHRITIS—PHOTOGRAPH OF THE HANDS OF E. C., SHOWING ESPECIALLY THE FUSIFORM ENLARGEMENT AROUND THE WRIST JOINTS AND INTERPHALANGEAL JOINTS.

Generally the order in which the joints become affected is, first the knees, then the wrists and cervical spine with subsequent involvement of the ankles, elbows and fingers. The temporo-maxillary and sterno-clavicular joints rarely give evidence of trouble.

The enlargement appears as a general thickening of the tissues around the joints rather than a hyperostosis; this swelling is smooth and fusiform and does not exhibit the bony

irregularity of arthritis deformans. No bony grating is ever felt, but often creaking is observed and fibrous adhesions in the synovial membrane. There is usually flexion, and always some limitation of motion in the diseased joints. Stiffness does not decrease as the day advances and the joints are used. Except in extremely acute cases no redness, joint heat nor tenderness on pressure is present. There is pain on active movement, especially when forced hyperextension is attempted, with passive motion usually the pain is slight or absent. "Night cries," such as are seen in tubercular joint disease, are by no means rare during the active stage.

One of the characteristic features of rheumatoid arthritis is the eventual involvement of the cervical spine with limitation of motion of the head in extension and rotation.

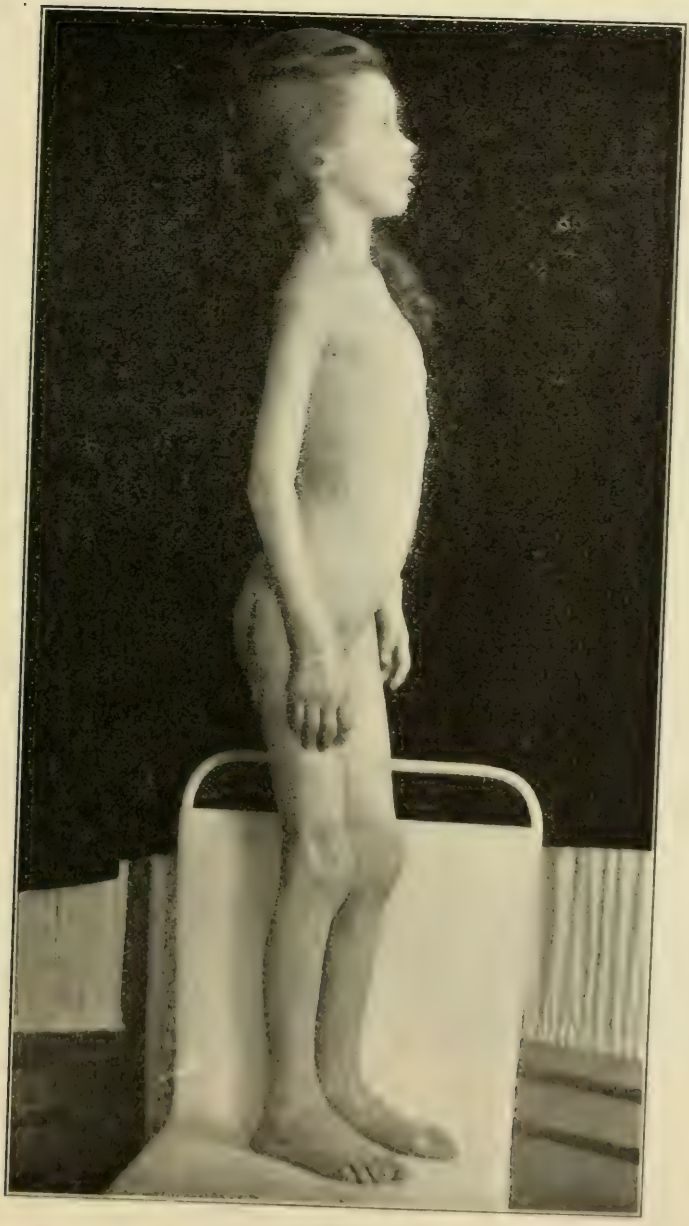
In rheumatoid arthritis in the hands and feet, the tarsus or carpus is first involved, and in arthritis deformans the metacarpo-phalangeal or metatarso-phalangeal articulations.

In the hand in the former are slight flexions usually at the wrist with more or less deviation of the hand to the ulnar side, slight flexion of the proximal, combined sometimes with slight flexion of the distal interphalangeal joints. There may be hyperextension of the metacarpo-phalangeal or of the interphalangeal joints. Also there may be slight flexion of the metacarpo-phalangeal and slight hyperextension of the distal interphalangeal joint in the same finger. The deviation of the fingers may be to either side, both directions may be seen in the same hand without bony change.

There is never any tendency to suppuration in the affected joints nor bony ankylosis.

Without doubt the most characteristic feature of this condition is the involvement of the lymphatic glands and spleen. The glands chiefly enlarged are those near the affected joints. They are separate, hard, painless, and have no tendency to break down, but the swelling of them appears to increase or diminish according to the activity of the process around the joints. Those usually hypertrophied are the epitrochlears, the axillary, the inguinal and posterior cervical. The face has often a peculiar waxy pallor, and the skin especially of the extremities may have a mottled appearance as if from a defective return circulation.

The eye-balls show in some cases a slight exophthalmus; hardly more than to be just noticeable.



RHEUMATOID ARTHRITIS.—PHOTOGRAPH OF E. C., SHOWING ESPECIALLY THE LIMIT OF EXTENSION OF THE CERVICAL SPINE.

Sweating is frequently profuse; it bears, however, no relation to the temperature, which is usually of two varieties: one in which the fever is slight, and lasts only a few days, and is followed by a longer period of apyrexia; the other in which there is a more or less continuous slight pyrexia. As the sweating has no connection with the fever, so is the fever independent of the periodical exacerbations around the joints.

This disease like those correlated is still a mystery in its etiology and treatment is of but little avail in checking the extension or curing it. It is fortunate that the condition is one of such rarity. It is generally acknowledged, except by Garrod, that the etiology bears no relation to that of rheumatism or gout and remedies so efficacious in these troubles have no effect on rheumatoid arthritis. There is no cardiac involvement in the latter. Charcot, J. K. Mitchell, and Osler seem inclined to believe in a neurotic origin from the trophic lesions, atrophy, etc., but these Still considers the atrophy of disuse and peripheral disturbance of function, as we see in tubercular joint affections. Farquier considers late hereditary syphilis an important etiological factor. Strumpell states positively that in one case in which he made a careful microscopic examination of the spinal cord the results were entirely negative in supporting the neurotic theory.

Now as to the points in differential diagnosis of this condition from the allied affections we would call attention to the following:

CHRONIC FIBROUS RHEUMATISM.

Chronic fibrous rheumatism is a sequela of repeated subacute attacks of acute inflammatory rheumatism and is most common among the poor, and those who have passed the middle period. In long-standing cases the cartilages undergo erosion, and the capsules and ligaments of the joints are thickened. There is muscular atrophy, stiffness, and pain, the latter very liable to exacerbations. There are often valvular lesions, but no enlargement of the lymphatic glands or spleen, and the joints are tender to the touch.

"Even in cases with the severest symptoms, the joints may be very slightly altered in appearance." (Osler.)

ARTHRITIS DEFORMANS.

The general progressive form of Charcot is more commonly seen in the aged, beginning chiefly in women at the menopause.

It is known in children, however. The disease while beginning in the synovial membranes and cartilages, the cells of which proliferate, shows its chief pathological and clinical feature in the production of osteophytes, where the joint pressure is least, causing a false ankylosis eventually by the exostoses locking the joint. The shape of the bones of the joint is entirely



RHEUMATOID ARTHRITIS—PHOTOGRAPH OF E. C., SHOWING FLEXION OF THIGHS ON PELVIS.

changed, especially in the hands and feet. Atrophy is present, and pain may be intense for years during the exacerbations, requiring morphia. Contractures are frequent. Trophic and circulatory changes often occur. In many cases after two or three joints are involved, the disease becomes arrested and no further

development takes place. The majority of cases reach a quiescent stage. The cardiac symptoms are absent, as are the glandular.

OSTEITIS DEFORMANS.

Osteitis deformans of Paget consists chiefly in the softening and thickening of the *shafts* of the long bones of the lower extremities, and marked kyphosis, and shortening of the spine with huge thickening of the vault of the cranium. It is more common in old men.

HEBERDEN'S NODOSITIES.

Heberden's nodosities show hard tubercles on the distal, or second phalanges of the fingers, occurring in middle aged women more frequently, who have a tendency to cancer. The joints are red, tender and swollen, the cartilages may become soft, and the ends of the bones eburnated. The joints show no tendency to involvement. A gouty diathesis does not necessarily coexist.

PARTIAL OR MONOARTICULAR DEFORMANS.

The partial or monoarticular form is seen only in old age, and more commonly in old men, as morbus coxæ senilis or spondylitis deformans or in the variety affecting the shoulder. It not infrequently seems to follow some injury.

The following case of rheumatoid arthritis has been in the wards of the Hospital for Crippled and Deformed Children:

E. C., aged eight, is the daughter of an indigent mountain farmer, who died of "hemorrhages of the bowels and had white swelling of the ankle." Her mother is living and well. Other children in the family are healthy. The patient enjoyed good health in infancy and childhood, having none of the exanthemata. One year before she was presented at the hospital she was suddenly seized with swelling of the ankles, and knees, followed by pain and stiffness. Her hygienic surroundings and food were poor, pork being the chief meat available and she had to walk a mile to school, frequently through the mountain snows. Her appetite continued good, but she lost flesh. At no time was it thought she had fever. Her treatment consisted chiefly of cod-liver oil. On admission to the hospital, September 1, 1898, the girl gave the appearance in gait of a case of double tubercular hip disease with rigid flexion and adduction of the thighs. Locomotion was effected chiefly by a shuffling gait at the knees.

On examination both thighs showed marked muscular spasm in the adductors, quadriceps extensors, and tensores vaginæ femoris, with pain on attempted motion. The thighs were held in a position of flexion of 45 degrees with perhaps 5 degrees of adduction. Thighs and legs atrophied; malnutrition and anæmia



RHEUMATOID ARTHRITIS—PHOTOGRAPH OF E. C., SHOWING ESPECIALLY THE SLIGHT EXOPHTHALMUS.

noted. Double Buck's extension and traction in the line of the deformity (45 degrees) was made with ten pounds on each leg. Salicylate of sodium gr. v. was given t. i. d.

September 15th.—Improvement noted in position of flexion to 20 degrees. Child suffers most pain at night and has "night cries."

October 18th.—Child still emaciated notwithstanding forced feeding. Lips fair color. Chest constricted and elongated. Apex beat in fourth interspace within nipple line. Palpation shows heart-beat rapid, no thrill nor murmur. Percussion gives no increase in cardiac, splenic or hepatic dulness apparently. All the joints are thickened and flattened (made conspicuous by the muscular atrophy) including the phalanges of the fingers. Muscular spasm and limitation of motion at the wrists and fingers as well as at the hips. Left wrist is especially stiff. Elbows have caused most pain of late. Shoulder joints comparatively free of involvement. There is still a position of flexion of 20 degrees at the hip joints with only about 5 degrees of motion in flexion and adduction and no motion in abduction and rotation. The knees cannot be flexed beyond a right angle without causing great pain. Knee-jerk a little more active on the left than the right side, but it is not distinctly abnormally increased, although ankle clonus on the left side is extreme. On the right side ankle clonus is rather hard to demonstrate, but it is present. Motion is also limited at the ankle joint.

In November the child had a mild uncomplicated attack of scarlet fever, which was traced to a school-book donated by a friend.

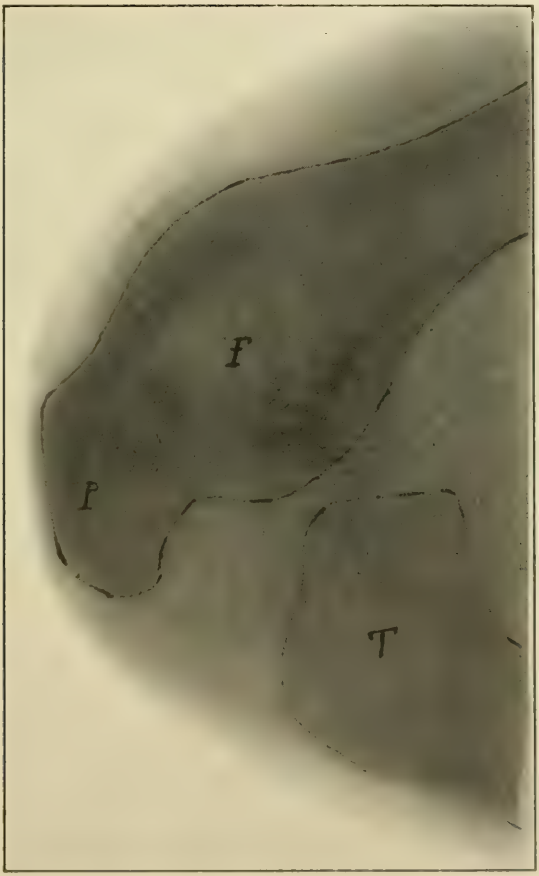
On January 18th, 1899, urine analysis showed clear amber, acid fluid, specific gravity 1038, but no sugar nor albumin. Microscopic examination negative. Previous and subsequent examinations likewise have shown nothing abnormal.

February 6th.—Nutrition and general condition improved since admission. Child complains that joints are more painful in bad weather. "Night cries" present (continued one to three a night until April). Pulse 132, poor tone. Has been etherized three times, and joint adhesions broken up without apparent improvement. Also has had high heating in Lentz-Stanley apparatus to 300° F. for half an hour, and massage (general and special) nearly daily, with the exhibition of iodide of potassium, sodium salicylate, arsenic, and cod-liver oil with iron by turns without apparent gain to the arthritic symptoms.

Examination of viscera and joints give same signs as in previous notes with the addition that the spleen is just palpable. The post-cervical, sub-maxillary, inguinal, axillary and epitrochlear lymphatic glands are much enlarged. The hips have lost a little in position of adduction and flexion. The wrist joints are

swollen on the posterior and radial aspects especially and motion is limited in extension, adduction and abduction chiefly and is painful. Swelling of the interphalangeal joints has increased.

The appearance of the skin is rather pale and mottled. The



FIBROUS RHEUMATISM—SKIAGRAPH SHOWING ANKYLOSIS BETWEEN FEMUR (*F*) AND PATELLA (*P*). THE TIBIA IS INDICATED AT *T*.

arches of both feet are good, but their abduction and pronation cause a prominence of the internal malleoli.

BLOOD EXAMINATION.—Fresh specimen showed good normal color to reds. Slight leucocytosis (apparent). One area in specimen showed a clump of four or five eosinophiles together.

With this exception the eosinophiles seemed to be in the normal ratio. More polymorphonuclear leucocytes were seen than any other type. The stained specimen showed after heating on copper at 200° F. for half an hour and staining with Ehrlich's triple stain for two and a half minutes.

Polynuclear neutrophiles	63.6 per cent.
Small mononuclears	22.0 " "
Large mononuclears	6.4 " "
Transitional cells	4.2 " "
Eosinophiles	3.8 " "
	100.0 " "

Hæmoglobin	87 per cent.
Red blood corpuscles	5,052,000 per cm.
White blood corpuscles	12,000 " "

The eosinophiles are at the extreme limit of normal, and their granules are unusually large and take a very brilliant eosin stain. We have been, however, only able to infer from the blood examinations that a slight secondary anæmia exists with slight eosinophilia.

May 20th.—The heating and massage have been continued and the carbonate of guaiacol has been given in three grain doses thrice daily, and the affected joints have been painted once daily with equal parts of guaiacol and olive oil since last note (Feb. 6th), with slight gain.

About ten days ago, under ether, an incision was made on the dorsum of the right wrist down through the capsule and into the joint. The capsule appeared somewhat reddened, perhaps, but the bones seemed normal.

Attempts at culture, in bouillon, gelatine and agar, of some of the joint fluid gave negative results, as did also a microscopic examination of a fresh portion of the capsule.

Status Præsens.—The tempero-maxillary, sterno-clavicular, and shoulder joints seem normal, but for the past six weeks the limitation of motion in the neck has been noted. The head can be flexed to the sternum, but not extended beyond 90 degrees. Rotation of 30 degrees only is possible to the right and left. The elbows cannot be fully extended owing to muscular spasm and some thickening over the head of the radius. The right epitrochlear gland is 5 by 10 cm. in diameter, and the left is double and even larger than the right. The wrist joint is swollen both from side to side and from before backward. The carpus is

slightly flexed on the forearm, and the metacarpus is extended on the carpus, which together with the atrophy of the interossei muscles gives the appearance of flattening. The phalanges are flexed on each other and at the metacarpo-phalangeal articulation. All of these last named joints are much thickened and boggy in feeling. Very slight exophthalmus is noted.

Spleen cannot be felt, but the glands mentioned in previous note still hypertrophied. Position of greatest ease is with thighs flexed 30 degrees and adducted 10 degrees. Ankles much thickened at and below malleoli and motion at medio-tarsal joint painful and restricted.

Motion at metatarso-phalangeal joint of the great toes only causes pain and is limited. Other conditions about the same as previously noted. Sweating has never been a prominent symptom, and the temperature has ranged from 99° to 100° F.

The photographs and skiagraphs of this case show the condition of the hands fairly well and the emaciation and local atrophies. A comparison of the skiagraphs of the hand of the old case of arthritis deformans presented herewith, with that of the case of rheumatoid arthritis will show the different osseous conditions and shapes of the member. Our skiagraph of an old case of chronic fibrous rheumatism dating from childhood shows well the adhesions between the femur and the patella.

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2000 NORTH CHARLES STREET.

A CASE OF MENINGITIS DUE TO THE TYPHOID BACILLUS.*

(From the Sear's Pathological Laboratory of the Harvard Medical School.)

BY A. H. WENTWORTH, M.D.,

Assistant in Diseases of Children and in Pathology in the Harvard Medical School; Assistant Physician to the Children's Hospital; Senior Assistant Physician to the Infants' Hospital, Boston.

Martha M., four years of age, was under my care for a period of seventeen days in October, 1898. A provisional diagnosis of typhoid fever was made after she had been in the hospital for several days. During this early period some of her symptoms were anomalous, but the subsequent course of the disease was that of a moderately severe typhoid until twenty-four hours before her death.

The clinical history is as follows:

The patient entered the hospital on October 1st. The family history was negative. The parents stated that the child had always been delicate, but had had no previous illnesses. The present illness began six days before she entered the hospital. During this time the symptoms consisted of loss of appetite, headache, fever, and drowsiness. She was said to have been delirious at times. There was no vomiting, retraction or rigidity of the head or tenderness in the neck.

PHYSICAL EXAMINATION, OCTOBER 1ST.—The patient was somewhat emaciated. The skin was pale but not otherwise abnormal. There was considerable apathy from which the patient could be roused without difficulty. The pupils were equal and reacted to light. Pressure over the spinous processes of the cervical vertebræ appeared to cause slight pain, but the patient was so irritable when disturbed that this symptom was doubtful. There was no retraction or rigidity of the head. Passive movements of the head were not painful. The tongue was coated and somewhat dry. The tonsils were hypertrophied. A regular and not excessive cardiac impulse was felt in the fifth left intercostal space inside of the mammary line. There was no enlargement by percussion. The sounds were

* Read before the American Pediatric Society, Deer Park, June 28, 1899.

clear. The only abnormalities in the lungs were occasional dry and moist râles in the posterior portions. The splenic dulness began at the eighth rib in the left axillary line. The edge of the spleen was palpable during inspiration, about 1½ cm. below the border of the ribs. The liver dulness began in the fifth space in the right mammary line. The edge of the liver was palpable about 2 cm. below the border of the ribs in the same line. The abdomen was normal in appearance. There was no gurgling or tenderness on palpation. The external genitals, joints, and bones were negative. The urine contained a faint trace of albumin; no sugar; specific gravity, 1015; an occasional hyaline cast and a few cells were found in the sediment on microscopic examination. An examination of the blood showed 12,000 leucocytes to the cubic millimetre.

OCTOBER 2D.—The condition remained the same. The child took milk very well. The night-nurse reported that at 7.30 P.M., and again at 12.30 A.M. the child's extremities and body became rigid, the hands clenched and the eyes rolled upwards. The condition lasted for about a minute each time.

OCTOBER 3D.—The condition remained the same as on the two previous days. The eyes were examined by Dr. E. E. Jack and were found to be normal. Lumbar puncture was performed and the spinal fluid was found to be normal. No growth was obtained from the spinal fluid on blood-serum.

OCTOBER 7TH.—The mental condition had improved. The child continued to be irritable but was much less apathetic. She remained awake for the greater part of each day and talked a little with her parents. An examination of the ears showed bulging of the right drum membrane. Paracentesis, performed by Dr. White, was followed by the escape of air which had become confined in the cavity of the tympanum.

OCTOBER 11TH.—Widal's test gave a negative result. The child's general condition remained about the same. The clinical symptoms were those of a moderately severe typhoid.

OCTOBER 15TH.—A second blood examination showed 9,600 leucocytes in a cubic millimetre. Widal's test was repeated and still gave a negative result.

OCTOBER 16TH.—In the afternoon of this day the child became very stupid, and by evening she was unconscious. Tonic and clonic convulsions and Cheyne-Stokes' respiration supervened. The respiration improved after stimulation, but the child

never regained consciousness. On the following day strabismus occurred. There was general rigidity of the muscles of the trunk and extremities, and at intervals clonic spasms occurred. The head was retracted. The pupils were widely dilated and reactionless. This condition persisted until the child's death, which occurred in the afternoon of October 17th. The cerebral symptoms lasted about twenty-four hours. An autopsy could not be obtained.

Lumbar puncture was performed for the second time a few hours before death. The spinal fluid was very turbid and soon showed a deposit of puriform material in the bottom of the test tube. Cover-glass preparations of the sediment were made and stained with Loeffler's methylene blue. Microscopic examination of these preparations showed large numbers of polymorphonuclear leucocytes; some fibrin and a certain number of large phagocytic endothelial cells, some of which contained blood corpuscles and detritis in their protoplasm. Enormous numbers of bacilli were found in every field. No other organisms were found in these preparations. The bacilli were decolorized by Gram's stain. Gabbet's stain for tubercle bacilli was negative. A drop of the exudation was examined without heating or staining and the bacilli were found to be extremely motile. The number of bacilli in a field exceeded that of any twenty-four hour bouillon culture of typhoid bacilli which I have ever seen. A culture on blood-serum was made *at the time of puncture* by allowing the spinal fluid to drop from the needle on to the serum. After twenty-four hours in the thermostat the surface of the serum was covered with a growth of fine colonies. Cover-glass preparations from the growth and from the water of condensation showed motile bacilli similar in all respects to the bacilli found in the cover-glass preparations made from the spinal fluid. No other organisms were found.

TRANSPLANT ON AGAR.—After twenty-four hours the surface was covered with a thin, pearly film.

LITMUS-BOUILLON.—After twenty-four hours the fluid was bluish-red. The litmus color persisted in the sediment in the bottom of the test tube.

FLUORESCEIN TEST.—(½ of 1 per cent. saturated alcoholic solution of fluorescein in bouillon.) The fluorescent appearance persisted after three days.

POTATO.—The surface of the potato presented a wet and glistening appearance without apparent growth after two days.

GELATINE.—A "stab" culture produced no liquefaction or gas formation. After forty-eight hours there was only a slight growth outward along the course of the "stab."

DEXTROSE-BOUILLON.—(1 per cent.) There was no production of gas after several days.

INDOL TEST.—(1 cc. of a .02 solution of potassium nitrite added to a bouillon culture, followed by the addition of a few drops of sulphuric acid.) There was no formation of indol.

SERUM TEST.—Specimens of blood were taken from two typhoid patients. The blood from both patients had shown previously a positive reaction to Widal's test.

In one case the blood was obtained from the patient in the fifth week of the illness. At this time he was suffering from a relapse and his condition was very critical.

In the other case the blood was taken from the patient in the sixth week of his illness. He had been very ill but at this time he was convalescing.

A bouillon culture was made from the agar culture and kept for twenty-four hours in the thermostat. The bacilli in this culture were small and actively motile. They were not very numerous. A dilution was made of one drop of serum to fifteen drops of the bouillon culture. The drops were measured from a pipette and mixed in small glass vials. The vials were tightly corked afterward to prevent evaporation. Microscopic examinations of each specimen were made every four or five minutes. In the first case the loss of motility was very marked within ten minutes. Clumping took place within twenty-five minutes. There were from five to fifteen bacilli in each clump. Very few single bacilli could be found at this time and these showed only vibratory movements. In the second case there was a marked loss of motility within fifteen minutes. Clumping occurred within thirty minutes. The clumps were somewhat smaller than those of the first case. Only a few isolated bacilli were found and these showed only vibratory movements.

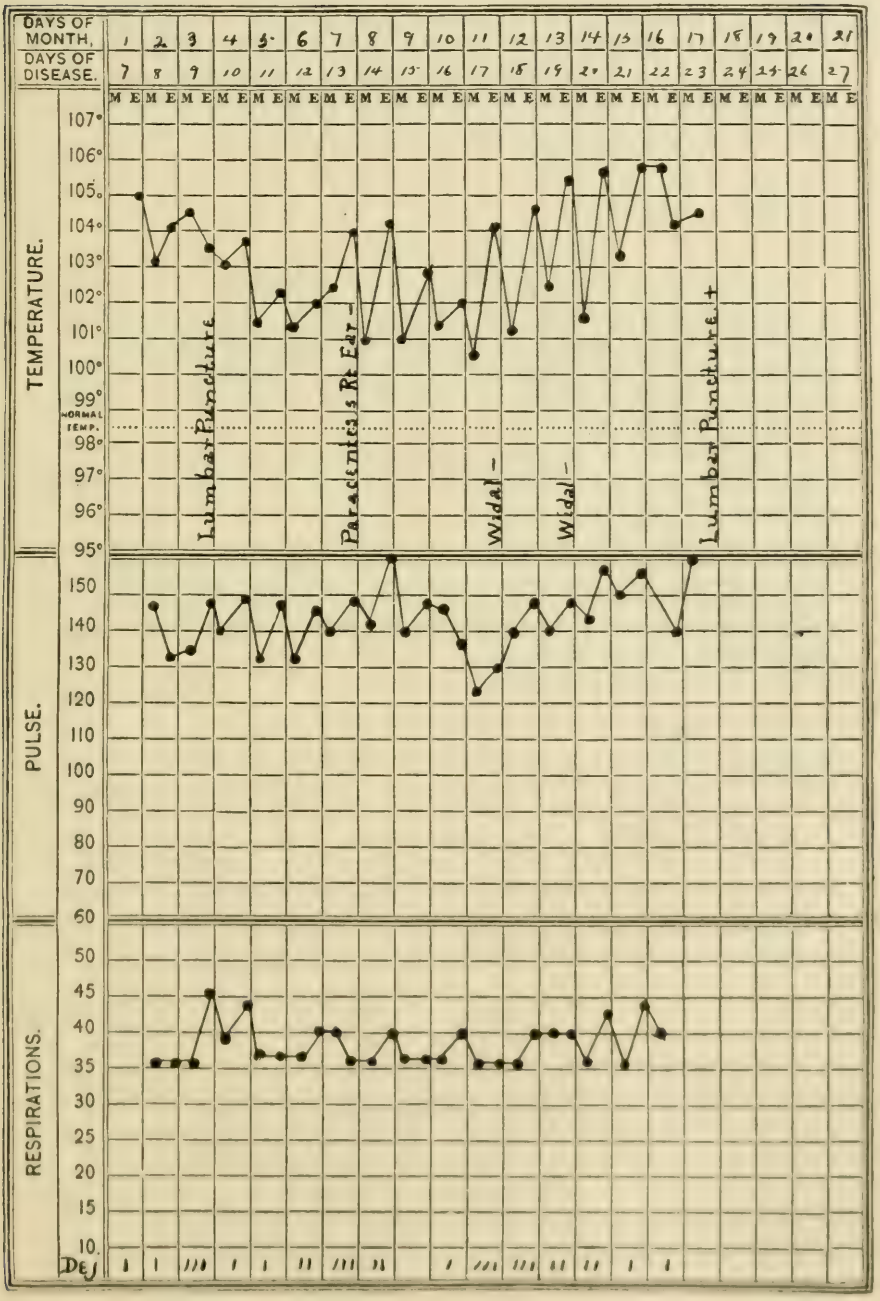
The question as to whether the child had typhoid fever during the three weeks' illness preceding the meningitis cannot be settled. Against its being typhoid fever are the two nega-

tive Widal's tests and the atypical nervous symptoms in the early part of the disease.

For the last two years during the epidemics of typhoid fever I have failed to obtain a positive Widal's test in quite a number of children treated at the Children's Hospital. The cases in which the test failed were either mild or moderately severe cases, judged from a clinical standpoint; or in some cases when the test was performed during the first and second weeks of the disease. In these cases the disease pursued its usual course, so far as the length of time was concerned. The temperature charts were those of typhoid fever. The symptoms and the signs obtained by physical examination were those of typhoid, and in a number of cases other members of the family had typhoid fever at the same time.

The occurrence of atypical nervous symptoms in typhoid fever is not so unusual as to render the diagnosis improbable, provided the subsequent course of the disease is that of typhoid fever. The occurrence of convulsions in the course of an uncomplicated case of typhoid fever is very unusual. The two attacks previously alluded to were observed by one of the night-nurses, and there was considerable uncertainty from her description whether there was loss of consciousness, or if there were typical convulsions. No repetition of the condition was observed and on the following day the child's condition was as it had been previously. The negative result of lumbar puncture and the small number of leucocytes in the blood at this time are both strong evidence against the presence of meningitis at this time. During the succeeding two weeks the child presented the symptoms of a moderately severe typhoid. It is well known that abdominal symptoms may be mild or absent in typhoid fever occurring in childhood. Enemata are required throughout the disease in a large proportion of cases. In my experience abdominal distension is rather uncommon, although the abdominal muscles may be more or less tense in many cases. The tenderness and pain in the abdomen, which are observed so frequently in adults are usually but slightly marked in children.

Baumgarten asserted "that when suppurative processes, apparently due to the typhoid bacillus, occur in the course of typhoid fever they are really due to a mixed infection with the typhoid bacillus and one or more varieties of the pyogenic or-



TEMPERATURE RANGE IN THE CASE OF M. M.

ganisms; and that when the typhoid bacillus is found alone in such cases it means that the other organisms have disappeared." This statement has been disproved by the experiments of Dmochowski and Janowski,* who have shown that the typhoid bacillus always disappears first in such cases.

SUMMARY.

IN FAVOR OF TYPHOID FEVER.—The onset; the duration of the disease; the character of the temperature chart and symptoms; the enlarged spleen; the failure to obtain any evidence of the presence of other diseases by means of physical examination; the negative result of the first lumbar puncture; the small number of leucocytes.

AGAINST TYPHOID FEVER.—The failure of Widal's test; the occurrence of doubtful convulsions in the early period of the disease.

IN FAVOR OF MENINGITIS DUE TO THE TYPHOID BACILLUS.—The presence in the meninges of a purulent exudation which contained enormous numbers of typhoid bacilli; the failure to detect the presence of other organisms by means of careful bacteriological examinations.

Only a limited number of cases of meningitis due to the typhoid bacillus have been reported. Previous to 1890 the methods employed to differentiate the typhoid bacillus from other organisms were so incomplete that the cases have little or no statistical value.

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294 MARLBOROUGH STREET.

DISCUSSION.

DR. KOPLIK.—In every case of continued fever that comes to my dispensary we are accustomed to make the Widal test immediately. My experience has been that of Dr. Wentworth, that cases with undoubted roseola, diarrhœa, etc., in which the physician could not make any other diagnosis from the history than that of typhoid fever, I very frequently failed to obtain the Widal reaction. Dr. Osler has published from the Johns Hopkins Hospital cases of typhoid, verified by autopsy in which the reaction to the Widal tests were absent throughout the course of the disease. So, I am sometimes compelled to make the diagnosis in spite of the absence of this test. In such a case as Dr. Wentworth reports I would not hesitate to make that diagnosis.

THE PRESIDENT.—I would like to ask what age Dr. Koplik's patients were in which he made the diagnosis in the absence of the Widal test.

DR. KOPLIK.—That is a very important point. I have found the Widal reaction absent in the older children and do not recall an experience of that kind with children below two years of age, but I cannot be positive on that point.

DR. FREEMAN.—It seems to me that it should be understood that a negative result with the Widal test means nothing, while a positive result means everything. What has been said to-day does not cast any reflection upon the Widal test. It simply means that in those cases it gave no information.

DR. ROTCH.—I think this is an exceedingly valuable contribution, not only from the standpoint of the bacteriologist and pathologist, but from the clinical side. It would have been valuable in the past to be able to say that meningitis could be caused by the typhoid bacillus. The French school has for many years recognized that, but it has always been doubted elsewhere, and it has made those of us who see cases in consultation, work at a disadvantage. I can recall some cases that appeared to be undoubtedly typhoid and when symptoms of meningitis arose the child was supposed to have a tubercular meningitis, while there was no proof of it beyond the fact that there had been a clinical picture of meningitis. Those cases I have thought in the past were cases of meningitis coming on in the course of typhoid fever, but I had no proof of it.

DR. WENTWORTH.—The reason that I said so much in the paper about the failure of the serum reaction is that recently I have seen a number of references, chiefly French, in which it was said that the serum reaction was invariably obtained in

cases of typhoid fever in children. I saw one article in which it was claimed that in 100 cases they had never had a failure. Such a statement as that is at variance with the results obtained by many competent observers. The serum reaction is undoubtedly one of our best methods of clinical diagnosis, but it fails at times, and I have no doubt that careful records would show in the work done by the same man, or men, that it fails in possibly 25 per cent of cases. This does not interfere with its positive value at all. There have been a number of cases reported in literature of cerebral symptoms in the course of typhoid, that were not due to meningitis.

A Rare Cause of Saturnism in Infants.—Roussel (*Loire médicale; Gazzetta medica Lombarda* , in his clinic at the Hôpital St. Étienne, observed quite a number of infants suffering from constipation, colic, and vomiting, the cause of which symptoms he was unable to fathom until he observed that the mothers were suffering from cracked nipples. Inquiry elicited the fact that an "application for sore nipples" was being used for the fissures, which, upon examination, proved to consist of a lead base. Although in the absence of teeth the gums did not show the slate-colored line of Burton, nor the inner surface of the cheeks the slate-colored patches of Gubler, etc., the author deems it fair to conclude that the syndrome of symptoms, taken in conjunction with the undoubted fact of the contact of lead with the infant's mouth, make the diagnosis of lead-poisoning beyond dispute. An inquiry into the question of applications to the nurse's breasts is, therefore, clearly indicated in cases of obscure colic and constipation in sucklings.—*New York Medical Journal.*

Typic Osteomalacia in Children.—F. Siegert reports a personal case and adds three from literature in which all the bones were macro- and microscopically affected with typic osteomalacia. Three were girls of thirteen and the fourth a boy, dying at eighteen years. All were of infantile habitus. The disease lasted three years in three cases, six in one. All had spontaneous fractures of the lower extremities, decrease in size, assisted by the curvature of the spine and limbs. In three cases there had been a slight, soon outgrown, rachitis in early childhood. As phosphorous treatment is a direct specific for osteomalacia of the growing or developed skeleton, the importance of an early recognition of the affection is evident.—*Munich Med. Wochenschrift.*

ON VACCINOID.*

BY F. FORCHHEIMER, M.D.,

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The peculiar manifestation of vaccinia, which is the subject of this paper, has been known to exist for some time, being usually denominated false or spurious vaccinia. Any one who has had to deal with vaccination has seen these manifestations, but to the French authors especially, is due the credit of having studied the subject, and to have come to conclusions as to their relations to vaccinia. Trousseau (*Medizinische Klinik des Hôtel Dieu*, translated by Culmann, 1886, I., p. 73) was the first to call special attention to the subject, and Dumontpallier (*Bull. de l'Academie de Med.*, 1893, 3 S., p. 345) introduced the term vaccinoid. Hervieux ("Quelques mots pur la fausse vaccine," *Bull. de l'Academie de Med.*, 1893, 3 S., p. 345) was the first to give a complete clinical description of the subject, and he has been fully quoted by all authors who have written on the subject since. He divides the manifestation of vaccinoid into three classes:

I. After a period of incubation of about twenty-four hours there appears a pink papule without areola, which disappears in a few days.

II. With the same period of incubation a larger papule develops, which has a small vesicle developed upon its surface, and is surrounded by redness. The vesicle forms a small scab which falls off and does not leave a cicatrix.

III. Again the same period of incubation, a larger papule with better defined redness, a larger vesicle and crust, and finally the production of a cicatrix, which, however, does not persist.

It will be seen from this classification that by vaccinoid is meant an atypical course of the lesions produced by the act of vaccination, these having, in their external manifestations, the same relation to vaccinia that varioloid has to variola, and possibly more, as will be shown further on. In the course of some vaccination experiments made in 1895 to determine other bearings of the subject, I succeeded in producing a number of vac-

*Read before the American Pediatric Society, Deer Park, June 28, 1899.

cinoids which seemed to me of sufficient interest to warrant publication. At that time there was being advertised a vaccine virus which was claimed to be free from other germs beside those of vaccinia, so-called aseptic virus, a desideratum still unrealized, and I determined to find the effects upon the human being of filtered virus. Quite a large quantity of this so-called aseptic virus, in capillary tubes, was obtained; was first examined bacteriologically—with the usual result that it was found full of ordinary germs in glycerinated virus. It was then diluted with equal parts of a normal Na. Cl. solution and filtered through an improvised Kitisato filter. Under all aseptic precautions this virus was used, and seven children who had never been vaccinated before were vaccinated with it. The results were positive in 4 cases, negative in 3. Out of the 4 that took, 1 was true vaccinia, the others were vaccinoid. In the vaccinoid cases the results were the same in all, and are represented by excerpts from the clinical notes taken by my interne, Dr. Williamson, as follows, in one of the cases:

Day of Vaccination,	I., June 13:	Vaccinated in two places with filtered lymph.
" "	III., June 16:	Slight redness at edge of vaccination wound; slight elevation; no pain or other subjective symptoms.
" "	IV., June 17:	Redness somewhat increased; sharply defined.
" "	V., June 18:	Redness still greater; papule more elevated.
" "	VI., June 19:	Same as the day before.
" "	VII., June 20:	Same as the day before, except the redness continues; elevation more marked.
" "	VIII., June 21:	Papule still continues to be more elevated; no evidence of formation of vesicle; no infiltration around the papule.
" "	IX., June 22:	Continues the same.
" "	X.-XIV., June 23-24:	No material change, except that the papule is growing smaller and the redness diminishing.
" "	XV., June 25:	Papule very much smaller; redness gone.
" "	XX., July 3:	There is left only a small area of reddened, glazed skin.

During all this time the temperature and pulse records were shown to be normal.

In the meantime a genuine Kitisato filter was used, with the same virus, by Dr. Kramer, who had already done work with filtered virus before, and control vaccinations were made upon 10 other unvaccinated children with negative results, showing, as has been shown before and abundantly since, that the vaccine germ does not pass through a filter; and that, as far as this point was concerned, our experiments proved nothing in that the lymph, undoubtedly, had been incompletely filtered in the first series of experiments.

If we now compare the results obtained in our positive cases with the statements made by Hervieux, we will see that they are not completely in accord with his statements. He as well as M. Alfred Vy and Mme. Aliot (l.c.) claim that vaccinoid never occurs in primary vaccinations; all the cases here reported are primary vaccinations and from my experience in private practice I am inclined to the opinion that they are just as frequent in primary vaccinations as in revaccinations. With the more extensive use of animal virus vaccinoid seems more frequent, although it was not uncommon in the days when we only used humanized virus. Hervieux's observations have led him to make the statement that the period of incubation is shorter for vaccinoid than for vaccinia, in the former being about twenty-four hours, in the latter about three days. In my cases the period of incubation was three days, and I have seen cases in which the period of incubation was prolonged to seven days. In the experience that I have had with vaccinoid it seems to me that at least two other forms should be added to those described by Hervieux. The first one is that described by R. Blache ("Vaccine efficace sans Manifestations Cutanées," *Revue des Maladies de Enfants*, i., 1883), in three of five primary vaccinations, with the same animal virus, using a cannula, he found a swelling in the muscles, freely movable, lasting a long time, so that after six weeks it was still the size of a pea. I have also found this in several instances when I used lymph which was introduced under the epithelial layer by use of an exploring needle. The last form is that which is followed by what Sir Jonathan Hutchinson justly calls a vaccine keloid. (*Archives of Surgery*, i., 193-198). He ascribes this condition to difficulty of healing and prolonged ulceration, but I have seen it occur with vaccinoid when both were practically normal. These keloids last for years and, possibly, during the life time of the individuals, so that more than once the temptation has been

strong to have them removed on account of the unsightliness of their appearance. Another form is that one described by Bosquet (see "Pfeiffer die Vaccination," *Tübingen*, 1884) in which no eruption took place but the ordinary constitutional symptoms followed upon the eighth day. A large number of cases of this kind was reported by French physicians (62 in all) in which this phenomenon was observed; all these were found immune to subsequent vaccination or inoculation, so that the proof of vaccinia sine exanthemate seems well established. I have never seen this form. The absence of constitutional symptoms, fever, enlarged glands, etc., has also been referred to in vaccinoid as marking its diminutive condition; secondary symptoms do occur in vaccinoid, provided there is a secondary infection, and during the last winter I found very many vaccinoids in revaccinations accompanied by high fever, enlarged glands and other constitutional symptoms, notably from one large batch of glycerinated lymph tubes supplied by a most trustworthy firm. It is claimed (Copeman, "Vaccination," London, 1899) that the bacteria of fresh virus do not produce suppuration, but in this instance, the date showed that the virus was too fresh and, after it had been kept for some time and then used, the untoward effects of its activity were wanting. In this connection it may be proper to state that it seems to be carrying things to extremes when Hervieux considers a simple redness around the vaccination marks as evidence of a successful vaccination. From a theoretical point of view it must be admitted that many other agencies besides the vaccine virus will produce a redness around a scratch, and from the practical point of view, I am sure, very few would not continue to vaccinate, in primary cases, under such circumstances until a result was obtained which, in my experience, has always been the case.

The most important questions in connection with the subject are: What relation does vaccinoid bear to vaccinia and in how far must it be considered as protective against variola.

In regard to the former we have the clinical experiment which answers the question. Dumontpallier, Hervieux, Vy, and Mme. Aliot (l.c.) have all taken the fluid from the vesicle in vaccinoid and by vaccination produced true vaccinia. Furthermore, as the result of the consensus of opinion of all those who have written on this subject, the conclusion can be positively arrived at that vaccinoid is only produced by introducing vaccine virus into the human system and by nothing else. The second ques-

tion, to what extent vaccinoid protects, is more difficult to answer. I know of no statistics which show how well human beings protected by vaccinoid alone withstand infection by small-pox. There remains for this purpose only the proof that can be afforded by revaccination. In regard to the proof of immunity against variola as proven by revaccination, Seaton ("A Hand-book of Vaccination," 1868, p. 311) in discussing 20,309 cases of revaccination says: "The local results obtained by the revaccination of any individual give us absolutely no information whatever as to the constitutional condition in which the revaccinated person was with regard to liability to contract small-pox." While this may be true for variola, we certainly know of no better way for testing the efficacy of a primary vaccination than by the success of failure of subsequent vaccinations. Blache in his three vaccinoids, in revaccinating, using this time humanized virus, records three second vaccinoids, and upon a third vaccination, obtained vaccinoid in one of the cases. In my own revaccinations made within four weeks from the time of the first attempt, with animal virus, I obtained two typical vaccinations out of the three cases, the third case was negative. It will be seen that my results vary decidedly from those of Blache, who was able to obtain only vaccinoid upon second vaccinations, but the conclusion to be drawn is evidently the same, that vaccinoid does not protect against small-pox as efficiently as does ordinary vaccination. How well ordinary vaccination, *i.e.* vaccination as it is commonly practiced, protects, it is not the purpose of this paper to discuss. The practical conclusion, however, is obvious, that when a primary vaccination results in vaccinoid, revaccination should be done and, in the presence of an epidemic, when revaccination is followed by vaccinoid, another attempt should be made.

The discussion of the etiology of vaccinoid can be based only on the basis of clinical experience, for as yet the contagium vivum of vaccinia has not been found. There are three things that must be taken into consideration: 1. The subject to be vaccinated; 2. The virus; 3. The method of vaccination. When Hervieux attributes his three forms of vaccinoid altogether to differing degrees of predisposition to vaccinia, he has certainly gone too far, as is shown by the experiments which I have made and by other testimony. That immunity to vaccinia may occur is accepted, but that it is extremely rare is shown by Seaton's (l.c.) statement, who in his enormous experience never found it, and in the remark made by him that in 9,000 cases at the

Blackfriars' Station of the National Vaccine Establishment there was but one case which on a second trial was unsuccessful, the result of the third attempt in this case being unknown because the child was not brought back. That differing degrees of predisposition occur is as true for vaccinia as for other infectious diseases, but if vaccinia is infectious, and there is no doubt upon this subject, it is subject to the general law of infectious diseases that resistance to infection can be overcome by quality and quantity of infection where there is not complete immunity. So that the quality of the virus and its mode of introduction are to be looked upon as the principal factors in the production of vaccinoid. In my own cases the quality of the virus was undoubtedly the cause of the vaccinoid; for the same virus, undiluted, and, partly unfiltered, produced true vaccinia where before it had produced only vaccinoid. In Blache's cases the evidence is not conclusive because the second time he used humanized virus. Much might be said on the subject of the quality of virus which we use nowadays; we no longer propagate our own virus, fortunately for us, but we trust to commercial virus which has been stored, possibly unfortunately for our patients. Certainly, in my own experience, second and third attempts at successful primary vaccinations, as well as vaccinoids, are more common than they were in the days when I was able to vaccinate from arm to arm, or to collect the virus in capillaries and keep it. The time when the virus is taken, the method of storing it and the time when it is used are, to my mind, the principal factors in the causation of vaccinoid. It is not my purpose to discuss methods of vaccination, but it is more than likely that the more thoroughly vaccination is done, the fewer the cases of vaccinoid, provided the virus is perfect. Vaccinoid is an abortive vaccinia, and abortive vaccinia is not perfect vaccination, and imperfect vaccination is the result of error in method.

The conclusions that I would present for your consideration are:

I. Vaccinoid is always modified vaccinia.

II. Vaccinoid protects against variola.

III. This protection is less than that of vaccination.

IV. Vaccinoid in the majority of instances is due to faulty method, rarely to increased resistance or immunity.

V. In primary vaccinations vaccinoid should always be followed by repeated attempts until either true vaccinia is produced, or until positive evidences of immunity exist.

VI. In the presence of an epidemic of variola, vaccinoid should be followed by revaccination both in primary vaccinations as well as in revaccinations.

FOURTH AND SYCAMORE STREETS.

DISCUSSION.

DR. PUTNAM.—It seems to me the word vaccinoid has not been used in this paper in a sense analogous to the word varioloid. I do not think it is recognized that varioloid is a case of variola occurring in a person who has had vaccinia and I do not think that vaccinoid should be used to refer to an individual who had had previous vaccination. I do not think any person has vaccinated individuals immediately after a successful vaccination in order to see how much immediate protection there was, but it would be an interesting thing to do. I should hope the term vaccinoid would be confined to cases of secondary vaccination and that others would be called mild cases of vaccinia.

DR. FREEMAN.—I think that these irregularities following vaccination will become much less frequent now that we have better lymph. The glycerinated lymph in capillary tubes is comparatively free from contaminating bacteria. It has been found that in about three months after a mixture of lymph with equal parts of glycerine the contaminating bacteria become much reduced in numbers, whereas the lymph becomes more efficient for vaccination. We had an experience at the Foundling Hospital with seventy vaccinations done with the glycerinated lymph of the New York Board of Health and carefully protected from contamination, the children being all vaccinated on the leg and all did well, there not being one bad leg among the seventy.

DR. DORNING.—The term vaccinoid, it seems to me, is only adding another word to our already overburdened nomenclature. We either have vaccinia or we have not and the condition described as vaccinoid appears to me to be either a modified vaccinia, or some infection due to some extraneous irritant in the lymph. Varioloid is regarded as a distinct entity, but the question comes up if even it should be considered as such, or if it should not be looked upon as a modified variola.

DR. FORCHHEIMER.—I was rather prepared for this objection to the term "vaccinoid," and indeed in this Society I am always prepared for possible discussions on nomenclature. I assure you I had nothing to do with the introduction of the term and think it is a barbarous combination of a Latin noun and a Greek ending, but the term *has* been introduced into literature, and there it is. In regard to the relation of this condition to vaccinia it seems to me it is the same as that of varioloid to true variola. I am not prepared to stand responsible for the term vaccinoid, but it has been introduced into English literature, where there are a great many other terms I would reject if I could.

INCONTINENCE OF URINE IN CHILDREN.*

BY FRANCIS HUBER, M.D.,

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Few morbid conditions in children are more annoying, or present greater difficulties in treatment, than those grouped under the head of incontinence of urine.

In a measure, this is due to the fact that the causes are numerous and often complex; secondly relapses are frequent, unless the patients are kept under treatment for some time after apparent cure. The importance of prolonged continuous treatment, even though the patients are under direct control, is well illustrated by the experience of Kerley referred to by Holt. We must not forget that the affection, at times, shows periods of improvement, particularly in summer, to relapse, or become aggravated when the cold weather appears, the general health deteriorates and sometimes without apparent known cause. In some cases incontinence occurs during the day only, in the greater number at night, in others it is present both day and night.

The diagnosis of the condition is easy, the recognition of the cause, a point essential to correct treatment, is a more difficult problem. In studying the question, the work may be facilitated, bearing in mind the associated neurotic element, by a consideration of the condition of the sphincter, the state of the bladder and finally the innervation.

Up to the age of eighteen months to two years, depending upon the early training and care in the management of the child, urine and fæces escape involuntarily.

The anal sphincter is the first to gain sufficient power, and usually by the second year the vesical sphincter attains control over the bladder. In some cases the power is never acquired, in others, once gained it may be lost, for the time being, during illness or lowered vitality. Fortunately, spontaneous cures occur in many rebellious cases about the time of puberty, attending the rapid development of the whole genito-urinary tract.

*Read by title before the American Pediatric Society, Deer Park, June 27, 1899.

In practice we observe cases in the weak, as well as in those whose muscles are well developed. Debility and anæmia, it will be found, are frequently associated as contributing causes.

A study of the literature, and of a large number of cases, which have come under personal observation, show that the condition is met with in many varied states, but underlying all there is one common factor—a neurotic condition or family history. Too much importance cannot be attached to the neurotic element, often more pronounced because of the associated anæmia. Many of the cases, therefore, must be viewed as a neurosis, pure and simple; in others, one or more additional factors, keep up the annoyance and must be removed before improvement takes place.

Frequently, notwithstanding the most careful search, the predisposing cause cannot be detected, and we are then compelled to resort to empirical remedies.

In all cases, however, a careful search should be instituted for a possible cause; if one is found, we are in a position to act intelligently, and with greater prospects of success.

Those caused by organic disease of the brain or spinal cord, and malformations of the urethra or bladder may be referred to incidentally, but do not properly belong to the class under consideration.

Local conditions as small meatus, preputial adhesions, adhesions about the clitoris, irritation and inflammation of the prepuce and glans, inflammation of the urethra, bladder, or rectum, stone in the bladder, constipation, hardened fæces in the rectum, rectal polypi, anal fissure, and pin worms are easily recognized.

The condition of the sphincter must be investigated, the bladder and its contents carefully studied, and finally the state of innervation ascertained. Frequently the sphincter is at fault. Incontinence then may be the result of a weak sphincter, or a part of the general weakness and muscular incompetency, due to a defect in its muscular tone. In the latter instance the patient may be anæmic and poorly developed, or the muscles may be normal, the sphincter alone being involved. No rule can be formulated, the feeble, anæmic, poorly-developed may or may not have strong sphincters—apparently robust children, on the contrary, may be affected.

Children who pass urine involuntarily while intent in their

play or study, are heedless or suffer from debility of the sphincter and want of mental control.

When the urine is passed with force some other factor than deficient power in the sphincter must be looked for. Masturbation frequently gives rise to incontinence; the explanation is found in the presence of a chronic inflammation at the prostatic portion of the urethra and neck of the bladder, with increased irritability and sensitiveness of the parts to the presence of urine.

Nocturnal and diurnal incontinence ordinarily suggests a lack of tone in the sphincter and defective innervation. When due to organic disease in the brain or spinal cord incontinence of fæces is also found, and such cases are usually beyond remedial agents. If due to compression in Pott's disease, recovery takes place when the cause is removed, or disappears as the result of treatment directed to the morbid state in the vertebræ.

In this connection we may profitably discuss the large number of cases occurring in children suffering from lymphoid hypertrophies in the naso-pharynx. A careful study of this part of the subject is important. Many of the patients make the rounds of the dispensaries, and consult various practitioners without permanent relief, until finally the remote cause of the trouble is recognized and removed. To digress for a moment. The question now comes up—what relationship exists between the incontinence and the adenoids? Certainly not reflex. A more logical and intelligent explanation is afforded by a consideration of the *pathological conditions* induced by (*a*) the obstruction of the lymph and blood circulation in the brain; (*b*) the retention of the morbid products of cerebral tissue metamorphosis, and finally (*c*) the changes in the blood from deficient aeration—all secondary to, and the direct consequence of the growth of the hypertrophied structures of the lymphoid tissues at the vault of the pharynx.

The valuable anatomical investigation of Axel Key and Retzius have demonstrated beyond question the connection between the sub-dural and sub-arachnoid lymph spaces, and the lymph vessels of the nasal mucous membrane.

The hypertrophy of the lymphoid structures of the naso-pharynx and the presence of large adenoids interferes with the lymph circulation. In consequence, the products of cerebral tissue metabolism accumulate in the brain and induce brain fatigue or "retention exhaustion."

Secondly, the general circulation is primarily affected and the cerebral necessarily involved because of the excess of CO_2 and the deficiency of O, the result of defective aeration. Thirdly, the swelling and infiltration obstruct the circulation in both the blood and lymph vessels, particularly the latter. As a result of the impediment at the base, the neighboring portions of the brain are involved, producing effusion and exudation. The meninges and encephalon participate in the morbid process, and induce the mental state so characteristic of the trouble In some cases, fortunately rare, the changes may be permanent. Guyer of Amsterdam has applied the term "aprosexia" to the mental condition. Such patients are pale, dull, stupid looking and backward. It is impossible for them to fix their attention, they are usually listless, forget readily and cannot study without discomfort the suffering increased by headaches, more or less severe and annoying.

It is not at all surprising that under such circumstances a lack of will power is found with loss of control over the vesical sphincter, the latter further weakened by the existing anæmia, causing diurnal and nocturnal incontinence.

In a number the predisposition appears to be inherited, for it is a common experience to find the children of neurotic parents afflicted in this manner. In one instance all the children of a mother with hystero-epilepsy were affected. In dispensary service such cases are by no means infrequent. In chorea a want of co-ordination between the sphincter and the detrusors is assumed. Occurring as a complication of epilepsy, the underlying cerebral disturbance must be regarded as the factor in the etiology.

Digestive disturbances, late suppers, heavy meals, and the ingestion of large amounts of fluids act as exciting causes. Drinking large amounts of water particularly at night, immoderate indulgence in weak tea, coffee and in some instances alcoholic beverages are frequent incidental factors in the etiology. Moderation in this respect is often followed by a disappearance of the disorder.

A short time ago a rachitic child of two and one-half years of age was presented because of the anæmic, flabby state and incontinence. In taking the history it was elicited that the child's diet was chiefly milk, as much as three quarts being taken daily. The amount of milk was reduced and solid food

ordered; also advised strych. sulph. and syr. hypophos. c. fer. The beneficial effects were soon evident, for the urinary difficulty quickly disappeared.

Independent of the quantity, the character of the urine may excite the bladder, and lead to premature contractions. Large meals, particularly an excess of nitrogenous materials with inadequate assimilation, give rise to increased amounts of urates and phosphates. Excess of urates, phosphates, oxalates or uric acid, highly concentrated urine, and hyperacidity, act in a similar way.

The small bladder found in many occurs as a congenital anomaly or an acquired defect. In the latter case, though not the primary cause, it tends to keep up the habit. The organ becomes contracted, and when the incontinence has persisted for a while, its capacity becomes less and less, and eventually may not exceed two or three ounces.

The frequency of urination establishes a practice which gradually degenerates into a habit; as a natural sequence, the viscus becomes accustomed to contract when only partly filled. The cause of the incontinence having been removed, the bladder gradually regains the power to hold larger and larger amounts, or the organ may be distended by a boric acid solution, etc., larger quantities being employed each time, twice or three times a week.

PROGNOSIS.—In cases of organic disease of the brain or spinal cord and in malformations, unless amenable to surgical means, the prognosis as to cure is poor. In the larger proportion of cases generally occurring in practice, if the cause can be discovered, the prospects of speedy cure are good. Those due to neuroses usually yield to continued treatment. Many otherwise rebellious cases fortunately get well about the period of puberty. In a small number the functional trouble persists beyond this time, and in a number of girls does not disappear until after marriage. The disorder is most frequent between the third and tenth year. The majority of those affected from the age of ten to fourteen years and over belong to the male sex.

TREATMENT.—It is very evident then that the treatment will vary with the nature of the underlying cause or causes. In the majority of cases general rules must guide us in the management, for no one remedy or plan can be depended upon to secure a favorable result under such conditions.

To quote a recent writer, "A very superficial survey of the pathology of enuresis will demonstrate the futility of any one drug in all cases. We can hardly conceive of a single remedy alike applicable to oversensitiveness of the bladder, to weakness of the sphincter, to hyperacidity of the urine and to a riotous nerve system."

The general health demands our first consideration and the nutrition should be improved. Roborant treatment, massage, sponging (local and general) and out-door exercise, gymnastics, etc., are advocated. The anæmia must be treated with iron and other tonics, the bowels are to be kept open, the digestive functions regulated and the urine examined for abnormal products (or too large amounts of any one or more of its constituents). A light, easily-digested evening meal, with but little water afterwards, should be insisted upon, no tea, coffee, or alcoholic beverages allowed. The little patient ought to pass urine before retiring and the bowels be encouraged to move at the same time. As such children wet the bed once or twice during the night at a fairly regular hour, they should be aroused before the accident happens, and made to pass water. Sleeping upon the back, or too much covering should be avoided. Raising the foot of the bed in some cases will prevent the urine reaching the sensitive trigone and neck of bladder and prevent the nocturnal incontinence.

Strychnia in full doses is indicated as a general tonic; when the sphincter is weak, in rebellious cases the remedy may be employed subcutaneously in the perineum. Ergot has been recommended in irritability of the spinal centres due to congestion. Electricity has been advised and good results are claimed.

Cases of irritable bladder due to masturbation are intractable. the evil practice must be conquered, and the congested and irritable posterior urethra, treated by local application of silver nitrate, etc. Reflex irritation of whatever nature and inflammatory conditions must not be lost sight of, whether situated in the urethra, vagina or rectum, prepuce or glans, bladder or kidneys.

In a great many instances, as no cause can be discovered, the condition must be regarded as a neurosis. Under such circumstances and in the majority of cases where predisposing factors have been removed, belladonna or its alkaloid must be

given. Belladonna and strychnia, single or in combination, are tolerated in much larger doses by children in proportion to the age.

A single dose of belladonna or atropine at night gives relief; it should be given to produce the physiological effect, a transient flushing of the face. In case the want of control of the sphincter is due to the "aprosexia" incidental to adenoids, the patency of the naso-pharynx must be restored and then only can we expect a cure.

As a routine plan, the following will yield encouraging results in quite a large proportion of cases. Fluids are to be restricted, particularly in the evening; a light early supper, several hours before retiring, is given; the bowels are to be evacuated and water passed before going to bed; one full dose of tr. belladonna at bed time. A tonic of strychnia and iron three times daily for some time on general principles. In addition the patient is to be aroused once or twice during the night to pass urine.

Such patients are not to be punished, scolded or held up to ridicule; on the contrary, harsh measures tend to keep up the annoyance. Patience, kindness, with strict adherence to the measures referred to yield excellent results, if conscientiously persisted in for a time.

In the accompanying table an attempt has been made to classify the causes of incontinence. This, as will be readily conceded, is a difficult task.

In many instances several factors are more or less intimately concerned in the etiology. Moreover, in a large number of the cases there is an essential neurotic state or neuroses:

Varieties: Nocturna (common)—Diurna—Continua.
Three factors: Condition of sphincter, (*b*) bladder, (*c*) innervation.

(1) Malformations	Small meatus, small bladder (natural or acquired). Hypospadia (perineal). Exstrophy of bladder. Epispadia.
(2) Organic Disease of Nervous System	Idiocy, cerebral palsy, meningitis, ch. hydrocephalus, myelitis, injuries of cord, and Pott's disease, with compression or inflammation of cord.
(3) Functional (?) Disorders	Epilepsy, chorea, diabetes (mellitus and inspidus). Hysteria, neurasthenia, anæmia resulting in poor innervation and muscular development.
(4) Weak Sphincter	*a.* Infantile condition persisting. *b.* General muscular incompetency, or *c.* Result of exhausting diseases, lowered vitality, general anæmia. Neurotic state.

(5) Irritability of Bladder	*a.* Inflammatory processes		Urethritis, balano-postitis, vulvo-vaginitis, cystitis, nephritis, pyelitis, rectal catarrh, ch. inflam. of prostatic portion and neck of bladder due to masturbation.
	b. Local		Stone, polypoid excrescences at neck of bladder, hyper-acid urine, excess of urates, oxalate uric acid, concentrated urine, excess of phosphates due to digestive disturbances and imperfect assimilation. Bacteriuria.
	c. External (Reflex)		Periurethral and perivesical inflam. Phimosis, preputial adhesions and balano-postitis, urethral inflam., vaginal catarrh, rectal catarrh, irritation due to pin-worms, constipation, hardened feces in rectum, fissure, and polypoid of rectum.
	d. Distended Bladder		Excessive secretion of the urine due to large amounts of fluids ingested; diuresis due to drugs, alcohol, tea, coffee, etc.
(6) Deficient Innervation	Emotional		Mental excitement—eager play. Fear of darkness or cold room. Wilfulness. Bad habits.
	Auto-suggestion		The child having wet the bed, and having been scolded or punished, the habit continues through fear. Dreams.
	Undue excitability of sphincter		Neurotic state. Masturbation. Sleeping on back.
	Enfeeblement of will		Anæmia, hysteria, neurasthenia. Lymphotism (adenoids).

209 East Seventeenth Street.

A Method of Obtaining Sputum of Young Children for Bacterioscopic Examination.—H. Meunier (iv., *Congrès pour l'Etude de la Tuberculose*) practises a simple lavage of the stomach in order to obtain the swallowed bronchial secretions; in these masses the tubercle bacillus is sought for by the usual methods of examination. The lavage is best practised in the morning, fasting, shortly after the fits of coughing that almost always occur after waking. The method is only applicable to cases in which there is a purulent bronchial secretion. Negative findings after several examinations of the sputum, in the face of positive physical signs of softening or suppuration, will greatly aid in excluding tuberculous disease and confirming the existence of one or other of the conditions associated with pulmonary suppuration, such as dilatation of bronchi, encysted or interlobar pleurisies discharging through the bronchi, and ulcerating broncho-pneumonia.—*American Journal of the Medical Sciences.*

A NEW BINAURAL STETHOSCOPE FOR THE EXAMINATION OF INFANTS AND CHILDREN.*

BY HENRY KOPLIK, M.D.,

New York.

I wish to present to this Society a stethoscope intended only for the examination of infants and children. The instruments to be found at our disposal are very imperfectly constructed. They do not seem to have been put together with any other definite object than the diminution of bulk. In attaining this I think the acoustic properties of the instruments have suffered. The present instrument meets very successfully the requirement that the smaller instrument should not only conduct the sound but do this, if possible, even more satisfactorily than the larger instrument intended for the adult. It must be admitted that the large chest piece of the binaural stethoscope intended for the examination of the adult is not satisfactory when used upon the chest of the infant and young child. The cause of this is that the opening of the chest piece is much too large for the chest. A confusion of sound results. Thus a fine crepitant râle or a faint murmur is easily masked by the sounds in the neighboring parts of the chest. Limitation of the auscultation to the smallest possible area adds to distinctness and definition.



The best binaural adult instrument now in use is undoubtedly that made by Tiemann & Co., in New York, after the suggestions of Dr. Yankauer. In this instrument the opening in the chest piece tapers gradually to the division into the two conducting tubes. At this point the cross section of the chest piece is equal to the combined cross sections of the two arms. A perfect acoustic instrument is thus obtained. My stethoscope is the exact counterpart of this

* Presented to the American Pediatric Society, Deer Park, June 27, 1900

instrument, except that it is geometrically reduced in size until it has the measurements shown here. The opening in the extremity of the chest piece is 19 millimetres or just 2 centimetres scant in diameter. From this opening there is a funnel-shaped cavity tapering gradually to the openings of the two arms of the chest piece, giving a large sounding funnel. Though the chest piece is smaller the sounding concavity is greater than that of any of the smaller stethoscopes in the market.

I have had this instrument in use for more than a year and can say that it is far in advance as to performance of the other instruments formerly at my disposal. There is more distinctness and less confusion. The result is perfect conduction of sound. It will be seen that the chest piece, though small, has a much larger sounding concavity than many of the much larger instruments. The instrument moreover is very compact and durable. The chest piece is constructed of one heavy piece of metal faced at the extremity with hard rubber. The arms which enter the ear have a cross section exactly equal to the dividing arms of the chest piece. The instrument is thus a uniform acoustic whole.

66 EAST FIFTY-EIGHTH STREET.

The Heart in Infancy and Childhood.—Crandall, quoted by Taylor and Wells, makes the following statements: 1. The apex lies higher in the chest and farther to the left than in an adult. 2. The apex beat is hard to detect in the infant. In the child, palpation shows this easier than in the adult. 3. The area of dulness is comparatively large. (Rotch indicates three stages in infancy and childhood during which differences are noted in relative and absolute dulness.) 4. Murmurs are heard over comparatively large areas. A study of differences in the quality of sound will help us here. 5. The rate may be increased and the rhythm altered by slight causes. 6. In rachitic children and in those affected by empyema or pleural adhesions, the apex may appear in an abnormal position. 7. Prominence of the precordia is sometimes marked. The examination should always be performed during sleep, or in a state free from physical or psychic disturbance, and the child should never be frightened with a formidable-looking stethoscope or other instrument. —*Medical Record.*

SCURVY IN AN INFANT OF SIX WEEKS.*

BY FLOYD M. CRANDALL, M.D.,

Adjunct Professor of Pediatrics, New York Polyclinic; Visiting Physician, Hospital for Scarlet Fever and Diphtheria; Consulting Physician, Children's and Infants' Hospitals.

After the extensive consideration given by this Society to the subject of scurvy in infants, the report of a single case could only be justified by its possessing elements of unusual interest. That, I believe, is true of the case I report, the elements of particular interest being the age of the infant and its diet. When the first symptoms were noticed the child was five weeks and five days old, and it was exclusively breast fed.

The youngest case reported last year by the Collective Investigation Committee of this Society was three weeks old. It was the patient of Dr. A. Matheson of Neillsville, Wis. "This was a child of four weeks who had already been ill five days when first seen. The child was fed at the breast. Its hygienic surroundings were poor. The disease exhibited perfectly typical symptoms, and ended fatally."

The next oldest case included in the committee's report was one and one-half months old. There were three children of two months. Among 359 cases, only 7 were under four months and but 34 were six months or under. The period of greatest frequency was between eight and eleven months.

Of the 36 cases reported in 1894 by Northrup and Crandall, the youngest was four months old. This case was reported by Dr. Stowell, of New York. The child was a dispensary case, and was fed upon condensed milk. The symptoms rendered the diagnosis certain, and improvement followed a change of diet.

Among 64 cases tabulated by Bovaird (*Philadelphia Med. Journal*, 1898, Vol. ii., No. 8), the youngest was six months old. The average of all the cases was twelve months.

As to diet, Northrup and Crandall in their 34 cases found but one child exclusively breast fed. In this case, however, the child was nursed by a woman who was also nursing her own

* Read before the American Pediatric Society, Deer Park, June 20, 1899.

child. Her own thrived; the foster child became scorbutic. The inference to be drawn is clear.

Bovaird in his 64 cases found 3 that were breast fed. In one the reporter states that under supposition that the child was suffering from specific taint, both mother and child had been kept for several months strongly under the influence of mercurials. Analysis showed the mother's milk to be deficient in every respect. In the second case details are not given. In the third case, which was reported in detail, the reason for the occurrence of scurvy is very obscure.

The Collective Investigation Committee, among 365 cases, found breast milk alone as the diet in ten.

Southgate (*Archives of Pediatrics*, Vol. x., No. 6) reports the case of a breast fed child fifteen months old who developed typical signs of scurvy. The diagnosis was confirmed by Dr. Rachford. The milk, so far as chemical analysis showed, was normal. There was, however, a very strong family history of tuberculosis. The child suffered from marked gastro-intestinal disorder and was extremely anæmic.

I believe it to be a fact that in every case thus far reported, in which a breast fed child has developed scurvy, there have been some complicating conditions of abnormal character. In several instances, the mother has been ill or the milk has been found to be of inferior quality. For example, in Southgate's case, in which the milk was normal, according to chemical analysis, there was a strong family history of tuberculosis; the child had suffered from gastro-intestinal disease and was very anæmic.

In the following case there were several abnormal conditions which make the occurrence of scurvy in a breast fed infant of six weeks seem less strange:

J. E. was born October 12, 1898. The father had not been in his usual health; he had long suffered from chronic rheumatism, and for more than two years had had chronic cystitis, and now has nephritis. He gave no syphilitic history whatever and showed no signs of that disease. The same may be said of the mother; while the patient never gave any evidence of specific taint.

The mother did not recover from the effects of the confinement for many weeks. In fact, she has never been as well since that time as before. She has had acute articular rheumatism,

and now has valvular cardiac disease. She was excessively anæmic. There was nothing in the family history, therefore, to account for the disease in the infant.

I first saw the child on November 28th when it was six weeks and five days old. It had never been a strong child, but, except for some indigestion, it had suffered from no illness until one week before my visit, namely, on November 21st, it then being five weeks and five days old.

On that day the child began to fret and worry and showed unmistakable evidences of pain. It cried when it was moved and it was soon noticed that the left arm was limp and did not move like the right. It was, moreover, painful to touch. The attending physician was called, as it was supposed that the arm had been injured. He found no evidence of an injury, however. On the third day swelling was first noticed. The swelling slowly increased, the arm became more painful, and the child cried at every touch. After five days, the right arm also began to be painful and became limp like the left. On the following day it began to swell. There were no other definite symptoms. There was slight indigestion but the bowels were fairly regular. There was no cough nor history of fever. The head was inclined to sweat when the child slept, but not excessively.

Upon examination, I found the child extremely anæmic with peculiar sallow complexion. It was not, however, marasmic nor wasted. There was no beading of the ribs, enlargement of the epiphyses, nor craniotabes. There was no pulmonary nor cardiac disease. The temperature was $99\frac{4}{5}°$.

The child cried upon being moved in a way to show pain, not simple irritability. The left arm was markedly swollen between the wrist and elbow, but there was no swelling at the wrist. There was, also, swelling of the upper arm above the elbow and some swelling on the flexor aspect of the elbow. At the latter point the surface was dark in color, but in other places the skin was simply tense and shiny and not discolored. The swellings were exquisitely painful to the touch. On the right forearm there was a pad of swelling just above the wrist over the flexor surface; this was also shiny and tense. When touched, the child made some attempt at moving the right arm, but no such attempt whatever was made to move the left. The legs were not swollen.

There were numerous mottled spots over the child's body,

several being quite dark in color, but there were no actual petachiæ There was no swelling nor discoloration of the gums and they did not at any time bleed.

The physician who had occasionally seen the child, lived in Brooklyn and failed to meet me at the time appointed for the consultation. I did not feel at liberty, therefore, to institute treatment and the child continued for twenty-four hours longer to take the digestive mixture which had already been prescribed and also an opiate to relieve the pain. On the following day, at the request of the physician, I took charge of the case. It is but justice to him to say that he had seen the child only on the second day of the illness, as he lived at a great distance.

I then found the left arm even more swollen than it had been on the day before, but the right remained unchanged. During the night both legs had begun to swell, the right being most seriously involved. The swelling appeared chiefly along the shaft of the femur, but it extended over the knee itself and a little below it. The skin over the swellings was not discolored. The child screamed at every movement or touch. The legs were apparently paralyzed and were drawn up into a position which has been described as typical of scurvy. The infant was a most pitiful sight.

The diet received immediate attention. The child had never taken anything but breast milk, the supply of which was very great. At my first question the mother offered the opinion that it was poor, for it was thin and watery. She could easily express by the hand a half teacupful. In fact, the baby was being chiefly fed upon the milk thus expressed, because of the pain produced by holding it to the breast to nurse. After the removal of three ounces or more the breast still seemed well filled and would have supplied another child. It was the most watery looking breast milk I have ever seen, particularly that at first drawn. The amount was so large that it at once occurred to me that the child never emptied a breast in nursing, but was simply getting "fore milk" which, it is well known, contains a much smaller amount of fat than does the later milk.

The child nursed regularly every two hours and seemed to be satisfied. A small amount of milk was at times regurgitated soon after nursing, and there was at times considerable flatulence. While the digestion was not at any time perfect, it was but seldom seriously deranged.

The mother took a general diet, eating meat but once a day. She had not been out of the house since the birth of the child. She took three milk punches a day, but I believe no other alcoholic stimulation. As before stated, she was anæmic to an extreme degree, and complained of constant backache and pelvic pains.

I made an examination of two samples of the milk by Dr. Holt's apparatus and by the centrifuge. The first was obtained by expressing the milk from the breast four hours after nursing. About three ounces were taken. This, I believe, was the food the child was actually getting. The second sample was taken immediately after the baby had finished nursing.

The first sample was extremely thin and watery in appearance, and neutral in reaction. The specific gravity was 1027. By Dr. Holt's method the fat percentage was 1.6. By the centrifuge the percentage was 1.8. The second sample was perceptibly whiter and less watery than the first. The reaction was neutral; the specific gravity, 1026. By Dr. Holt's method it showed 2.4 of fat. By the centrifuge 2½ per cent. of fat was shown.

The very low percentage of fat and the low specific gravity showed an extremely low percentage of proteids—in other words, excessively poor milk.

I at once changed the feeding without waiting the result of the analysis. A brilliant result might perhaps have been obtained by stopping the breast milk at once, and placing the child upon cow's milk, with the occasional administration of orange juice. The child's condition, however, was so precarious that I feared too radical a change. An attack of acute indigestion at that juncture would certainly have proved fatal.

I directed, therefore, that a teaspoonful of fresh, unpasteurized cream should be mixed with three teaspoonsful of water and should be given immediately before each nursing. The cream was obtained by taking six ounces from the top of a quart of milk. I directed the mother to eat more meat, reduce the stimulants she was taking, and begin to take exercise in the open air. She was directed to express half a teacupful or more of milk from the breast before each nursing and to nurse the child regularly every two hours during the day and four at night. The mixture of pepsin which the child had been taking with evident benefit was continued. No other medication was given. After the scorbutic symptoms had subsided, iron was prescribed.

After two days the amount of top milk was increased and the mother was directed to discourage breast feeding. Cow's milk was gradually substituted until at the end of eight days the child took exclusively a mixture of the following strength: Fat, 3 per cent.; sugar, 6 per cent.; proteid, 1 per cent.

On the day following the change of treatment, the child had made no improvement but was not worse. On the second day there was certainly less pain but no other change. On the fourth day, the change for the better was undoubted. The pain was markedly diminished, there was no crying when the child was quiet, and but little when she was moved. She would lie perfectly still for an hour at a time. The limbs were less sensitive to touch. The discolored spots upon the body were less distinct. The swellings were but little diminished but there were no new ones and no increase in their size at any place.

At the end of a week, the pain was practically gone; the child moved all its limbs in quite a natural way. It was contented and quiet, and cried but little. All the swellings were diminished in size, and those of the legs had nearly disappeared. The left arm was but little swollen, but the peculiar swelling over the right forearm still remained. It was two weeks before the child could be considered as well, and even then there was a little diffuse and rather indefinite swelling about the arms.

After two weeks, as the breast milk continued to be very abundant and showed fully 3 per cent. of fat and a gravity of 1029, the mother was permitted to nurse the baby three times a day, the nursings being those of the night and early morning. The baby digested the breast milk better than the cow's milk. Upon increasing the number of nursings, however, with corresponding decrease of cow's milk, the pain and restlessness returned after a few days and undoubted swelling appeared in each arm.

The feeding continued to be a somewhat difficult problem, for the digestive power was always weak, as well as erratic and variable, so that frequent changes in the composition of the food were necessary. However, with many discouragements, the child was kept chiefly on cow's milk.

Although there were no further scorbutic symptoms, the subsequent history of the case was interesting, for the poor child was not yet through trouble. During January and early February it suffered from severe furunculosis which for a time threat-

ened its life. During a period of nearly three weeks there were forty furuncules and abscesses. They were located chiefly about the head, neck, and chest. The child, however, survived the ordeal and gradually returned to a better condition than it had yet shown.

It was progressing quite satisfactorily until March 22d, when it was seized with pneumonia. The disease developed with extreme rapidity; the temperature soon reached 105° F., and continued at or above this point without remission. The child was literally overwhelmed by the disease and died on the fourth day at the age of twenty-three weeks. The little one was seen by Dr. C. G. Kerley who concurred without hesitation in the diagnosis. The pneumonia was the direct cause of death and had, I believe, no relation to anything that had gone before.

113 WEST NINETY-FIFTH STREET.

DISCUSSION.

DR. DORNING.—A child was brought to me when seven months old because he did not thrive. His family history was good. Since birth he had been fed on various artificial foods, alone and in combination with milk. The action of his bowels has been variable and his digestion has been capricious. Examination showed a poorly developed baby, extremely emaciated, quite anæmic and somewhat rachitic.

The bowels were cleaned out with a few small doses of calomel. He was ordered a food composed of top milk, three parts, water, five parts, and peptogenic milk powder, a heaping teaspoonful to eight ounces of the mixture. The milk was heated to just the boiling point. It was retained and well digested from the beginning and he immediately began to improve. His progress was rapid and steady, gaining from eight to twelve ounces a week.

When ten months old the mother noticed that he cried whenever his napkins were changed; this continued for a week, getting worse each day. She then discovered that his legs hung limp and that he screamed when they were moved, but that he seemed to be perfectly comfortable when lying on his back, undisturbed. He continued to take his food as usual and his bowels were regular.

The lower third of each thigh was found to be very painful to the touch. Raising either leg caused the patient to scream. There was no swelling or discoloration of the parts, nor of any other part of the body. The mouth was healthy. He seemed

to be well nourished, his flesh was firm and he had been gaining in weight right along. The anæmia had almost entirely disappeared. His general hygiene was good.

The steadily improving condition of the patient caused me to hesitate in diagnosticating scurvy. To determine the question of its being an attack of rheumatism, sodium salicylate, three grains every three hours, was given and absolute quiet enjoined. At the end of thirty-six hours there was some improvement and by the fourth day he moved his legs voluntarily and gave no evidence of pain when they were handled. He continued thus for nearly two days, when he again began to scream when his legs were moved. As before, they remained motionless and he appeared to be comfortable when lying quiet. A swelling now (on the seventh day) appeared on the lower third of the right femur just above the condyle. It was mostly on the inner aspect of the limb. On the following day the left leg showed a slight swelling in the same situation. The skin over these swellings did not feel hot and showed no discoloration. The swellings felt semi-elastic to the touch, but did not give a sense of fluctuation, did not pit on pressure and were painful on manipulation. There was no pain in any other part of the body, neither was their swelling nor discoloration of the skin. The gums appeared to be healthy. The salicylate of sodium was stopped and the juice of two oranges a day, to be given in divided doses, was ordered. No change was made in the diet. Within twenty-four hours improvement began and on the third day all pain and swelling had subsided. The same diet, with the juice of one large orange daily, was continued for some weeks longer. He continued to thrive, and at ten and a half months cut his first teeth.

The points of interest in connection with the case, are: First, the development of the scurvy notwithstanding the steady physical improvement of the patient. Second, the temporary amelioration of the symptoms coincident with the administration of the salicylate of soda. Third, the steady and permanent disappearance of all manifestations attending the exhibition of the orange juice, without any change of the diet.

DR. ROTCH.—It does not seem worth while to waste time in scorbutus with salicylate of sodium, because a large number of cases have been treated in that way without any good result.

DR. GRIFFITH.—There is a question in regard to the toothless age that is worth mentioning. The statement is made by Barlow, and is made in italics, that before the stage of the eruption of the teeth there is no characteristic eruption on the gums. I have seen no case myself at an age before the appearance of the teeth, but in the investigation by this Society last year there were 45 cases reported as occurring before that age, and in 24 of those the gums had been the seat of eruption. Of course this

Society is not responsible for the statements of those reporting cases to us, but it seems to me hardly likely that all those physicians were wrong, and I think I am right in stating that some members of the Society have seen affections of the gums before the teeth appeared.

DR. KOPLIK.—The last case of scorbutus I saw was marked by a hemorrhage of the gums before the eruption of the teeth.

DR. WENTWORTH.—I would like to ask Dr. Crandall whether he thought the swelling was due to subperiosteal hemorrhage?

DR. ADAMS.—I want to put myself on record as having seen two cases during the past spring where the teeth had not erupted. In one the hemorrhages in the gums were very extensive, and in the other both the lower gum and the tip of the tongue were affected.

DR. ROTCH.—I have seen very extreme cases of scorbutus where these swellings occurred and where there was undoubtedly periosteal hemorrhage without any hemorrhages elsewhere.

THE PRESIDENT.—I have seen one very severe case with prolonged swelling over two of the lower teeth that had not yet cut through.

DR. CRANDALL.—As to the swellings, we know that many of them result from subperiosteal hemorrhages, but I do not know that that was the cause in this case. I once made an autopsy upon a boy of thirteen in the idiot asylum who had died with scurvy. In that case there was no subperiosteal hemorrhage. I should be inclined to think that in this case there was not in the legs at least, because the swelling came on very rapidly and its subsidence was very prompt, much more so than in the arms. This case has unsettled my ideas as to the etiology of scurvy. It seems to me it was not so much a lack of something in the milk as the presence of something that caused the trouble. As soon as the baby was put back on that milk again it began to get restless, and I think if I had allowed it to continue we should soon have had a return of the same condition.

Meningo-Typhoid Fever.—Loeb (*Deutsches Archiv für klinische Medicin*) reports the case of a patient severely ill, a diagnosis of meningitis being made. During the course of the illness, the Widal reaction that had been negatived became positive. It was supposed that the primary affection was meningitis, due to the typhoid bacillus, and that later the infection of the general system, particularly of the intestine, occurred. Loeb, in consequence, adopts the hypothesis of Sanarelli, that typhoid fever is to be looked upon as an infection of the entire lymphatic system.—*University Medical Magazine.*

Lecture.

THE POSITION OF ANTENATAL PATHOLOGY.

(INTRODUCTION TO A SERIES OF SIX LECTURES ON ANTENATAL PATHOLOGY AND TERATOLOGY, GIVEN IN THE UNIVERSITY OF EDINBURGH AND IN THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, LONDON, FEBRUARY AND JUNE, 1899.)

BY J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S.E.,
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Antenatal pathology, more, perhaps, than any other branch of medical study, requires an introduction which shall be also an explanation. To some extent also it may be thought to need a vindication—to be in want of a reason for its existence. Lately unborn among the sciences, it has but recently seen the light, and, like all new-born things, has a hold upon life which is uncertain. Full, no one can doubt, of great possibilities, if it be able to reach maturity; but apparently so weak as to suggest to the careless observer little chance of that. Yet the stout ivy tree that now upholds the crumbling wall was once slender and delicate and clung to the masonry. Not so long since was bacteriology, even as antenatal pathology now is, provoking the criticism that the study of organisms so minute as to need the microscope for their detection was hardly likely, most unlikely indeed, to prove of benefit to the human race, yet pregnant all the while with surgical antisepsis and asepsis and with the marvels of serum therapeutics. Antenatal pathology, too, deals with small organisms: to wit, the little fœtus, the insignificant embryo, the altogether microscopic ovum and spermatozoon, and so merits the same condemnation; it may also receive a like justification. It is permissible to hope that posterity will applaud the action of the University of Edinburgh and the Medical Graduates' College of London in giving facilities for the study of this novel branch of medical science. In the meantime the verdict of future generations is of less practical importance than the sanction and approval of contemporary opinion.

DEFINITION OF ANTENATAL PATHOLOGY.

Antenatal pathology is concerned with all the morbid processes which act upon the organism before birth and with the effects which they produce by their action. In a narrow sense

only can its limits be defined. It deals with the pathology of the individual during his fœtal and embryonic existence, and in this respect may be regarded as the pathology of intrauterine life and have the period of its action limited to ten lunar months; but manifestly any such limitation is unsupported by the known facts. It cannot be doubted that pathological agencies are at work even before the occurrence of impregnation, and that they produce their effects upon the specialized reproductive cells before these have united together, sperm with germ, to form the first rudiments of the individual. Further, the great doctrine of the continuity of the germ plasm pushes back the *terminus a quo* of the action of morbid agents beyond the immediate progenitors of the individual, and compels the student of antenatal pathology to take into account the medical history of earlier ancestors. Just as birth marks not a beginning but a stage in the life of the individual, so impregnation marks not a beginning but a stage in the life of the family. Again, antenatal pathology cannot be said to end with the close of intrauterine life, for it is impossible to prevent morbid processes occurring before birth, projecting their effects often with disastrous results far into the life that is after birth. It is this projection of the antenatal into the postnatal that hinders the formation of an exact definition of the boundaries of the science of antenatal pathology. It is necessary to think not only of the effects of the action of morbid agents upon the organism still *in utero*, but also of the results which they produce upon the individual in extra-uterine life. Incidentally it may be remarked that this fact constitutes one of the most cogent arguments in support of the practical importance of the study of antenatal pathology. Since it has come to be recognized that all infants do not start from scratch, so to speak, in their life race, so it has been borne in upon the practical physician and surgeon that it may be profitable to investigate the conditions which handicap them. Truly it matters little that the projection of the antenatal into the postnatal has interfered with the mathematical exactness of a definition if it have compelled the attention of a medical public until now perhaps but slightly inclined thereto. Where the profession has hung timidly back, the modern novelist has plunged boldly in and has not hesitated to deal with any or all the problems of antenatal pathology from the transmission of syphilis and the causation of malformations to the predisposition to tuberculosis and the in-

herited tendency to insanity. It need hardly be said that the effect upon the public mind has not always been for good. Disaster stares the mariner in the face who sets out without rudder or compass. The medical profession must in this matter provide the general public with a rudder, perchance it may even find a compass.

THE EMERGENCE OF ANTENATAL PATHOLOGY.

Antenatal pathology is a new department of medical and biological study. Its novelty, however, consists not so much in the facts with which it has to deal as in the way in which they are approached, in the standpoint from which they are surveyed. It sets forth a new manner of looking at old facts. As has been aptly said by Professor A. R. Simpson: "Antenatal pathology is one of the last provinces of medicine to have emerged from a kind of mediæval wonderland into the realm of science." This is particularly true of a large and very characteristic subdivision of antenatal pathology which has been named *teratology*, and which deals with monstrosities (terata) and their mode of origin. It may be doubted whether teratology has yet emerged from its "mediæval wonderland." The general public, it must at once be admitted, looks upon monstrosities to-day very much in the same manner as they were looked upon in the Middle Ages, but is a trifle more tolerant towards the progenitors of such prodigies. In this respect, however, the general public is not to be too severely censured, for is it not true that many medical men, when they meet with specimens of antenatal malformation, describe them in a fashion that they would be ashamed of if the case were one of nervous disease or tumor growth, and employ a terminology which may with reason be termed mediæval? This is no exaggerated statement, for I have received letters from well-known members of the profession asking for information on matters concerned with the origin of monstrosities expressed in a way that proved at once that they looked upon teratological phenomena very much in the same fashion that the public of the last century looked upon cases of insanity. What reason then is there for wonder if in the public mind a veil of mystery shrouds the birth of a monstrous fœtus?

But, let it be borne in mind, antenatal pathology has not emerged directly out of the ignorance of the Middle and Dark Ages; it has not sprung full of life immediately out of dead

superstition and curious questionings. Rather has it arisen out of a sea of books and monographs, out of a perfect ocean of literature. In this ocean, as may well be imagined, there is much that is of little worth; nevertheless the trawler will now and again bring up in his net something that is of prime import. Some day there will be a systematic dredging and a sounding of the depths of this vast expanse, with a great increase in our knowledge of its fauna and its flora, with possibly some attempt at a classification of these into useful and useless nutritious and non-nutritious, digestible and indigestible. The lecturer has fished up out of this bibliographic sea over two thousand works, including atlases of teratology, many treatises on monstrosities, and hundreds of monographs, theses, dissertations, and reprints dealing with special forms of fœtal disease and embryonic malformation. The great library at Washington contains thousands more, the results of long dredging; their titles are to be found in the *Index Catalogue.* There is much that is of little or no value in this literature; that part of it which deals with speculations as to the causes of malformations may often be overlooked with more of gain than loss; but in the case-records and more especially in the accounts of dissections of specimens the searcher is every now and again rewarded by the finding of something of very real worth. Incidentally it may be remarked that the searcher must go to the originals for his information; he is under no temptation to consult abstracts and summaries for the very sufficient reason that articles on monstrosities and fœtal diseases have had but little attraction for the makers of epitomes and periscopes. This is all the better for the searcher; but it means that he must be prepared to read anything from the Greek of Aristotle and the Latin of the Middle Ages to the various European languages of the present day. A knowledge of English opens only a small corner of this large library.

A subject with a literature so vast cannot then be called a new subject. As has been said already it is the point of view that is novel. In what exactly this novelty consists will become clear as the subject opens up. In the meantime it may be noted that the new point of view is one with a vastly widened horizon.

THE AGE-INCIDENCE OF MORBID PROCESSES.

It is conceivable that morbid influences may act upon the individual during three epochs in his existence: they may act

after, during, or before birth. In other words their influence may be exerted in postnatal, in intranatal, or in antenatal life. The results of their action vary with the period during which they act, and hence it comes that there is a postnatal, an intranatal, and an antenatal pathology. It goes without remark that it is about postnatal pathology that most is known, for from birth up to death morbid causes are seen at work, and their effects are patent to all. Injuries, poisons, microbes, and parasites all play a part in producing the numerous and varied changes in the structure and functions of the body so fully described in medical and surgical text-books. When pathology is spoken of it is usually postnatal pathology that is meant.

It is not long before it is recognized that even in postnatal pathology there exist peculiarities which are due to age-incidence; differences there are between the pathological changes which are characteristic of advanced age and those which occur in adult life, or in childhood, or in infancy. The rheumatism of childhood, for instance, is very different in its clinical manifestations from that of adult life. In the former, erythema (both marginatum and papulatum), painless subcutaneous nodules (pea-sized and situated over the bony prominences of the knee, elbow, ankle, and spine), and endocarditis and chorea are marked symptoms; while acute pain and tenderness in the joints, high fever and profuse sweating are often entirely absent. In the rheumatism of adult life, on the other hand, erythemata, nodules, and chorea are uncommon, while grave arthritic developments are frequent. Heart disease, also, differs in its characters according as it is met with in the child or adult; and there is the typical senile heart.

The differences, however, which mark off these epochs of postnatal pathological life are small indeed when contrasted with the characters which serve to distinguish antenatal from postnatal morbid changes. Such a dissimilarity exists between the pathological phenomena which occur before birth and those which are met with after it as to suggest essential differences in nature and causation. This is specially true of teratological phenomena. They are startlingly unlike anything else in the whole range of pathology. It is to this peculiarity more than to any other that teratology owes the isolated position that it has so long occupied. Like Corea among the nations has teratology been among the sciences: a hermit kingdom, a her-

mit science! To the onlooker it has seemed as if neither had any part to play outside its own narrow limits. Yet is the whilom hermit subject capable of profoundly influencing the other departments of medical research and of being influenced by them.

But antenatal pathology includes more than teratology. Morbid causes may act during that part of antenatal life which is called fœtal as well as in that which is embryonic. Antenatal pathology embraces the study of the diseases of the fœtus as well as the monstrosities of the embryo. In many respects the pathology of the fœtus is more closely allied to that of postnatal life, yet it has till recently attracted much less attention than has teratology. To study how, for instance, the microbic diseases affect the fœtal organism in its altogether peculiar intrauterine environment cannot fail to throw light upon many problems of infection and immunity. The fœtal skin diseases are specially worthy of investigation, for in them the factor of the influence of parasites is practically excluded.

A third part of antenatal pathology deals with the action of morbid causes upon the organism in the germinal period and with the results produced thereby. This may be termed germinal pathology. It includes the consideration of the morbid processes which occur in the ovum at and immediately after impregnation and also with those that affect the reproductive cells (sperm as well as germ) before fertilization. Here we have to do with the very springs of life with their jealously guarded secrets and the hidden mysteries of heredity.

SUBDIVISIONS OF ANTENATAL PATHOLOGY.

It is evident, therefore, that just as pathology may be divided into postnatal, intranatal, and antenatal according to the age-incidence of morbid processes, so in its turn antenatal pathology may be subdivided into *fœtal, embryonic*, and *germinal*. This subdivision is not fanciful but real, more real certainly than the separation of postnatal diseases into those of old age, adult life, and childhood. On the dividing line between antenatal and postnatal pathology lies *intranatal* or *neonatal* pathology. The new-born infant is liable to be attacked by morbid conditions, which, although resembling in a general sense the surgical injuries and diseases of the child and adult, yet differ from them in certain particulars. To emphasize these differences a

nomenclature has come into use which appends to the designation of the pathological condition the word "neonatorum." In this way such terms as "cephalhæmatoma neonatorum," "pemphigus neonatorum," and "melæna neonatorum" have been employed. Many of the peculiarities of these diseases and injuries are directly due to the great birth-traumatism, and others can be traced to the readjustment of physiological activity which follows that act; neonatal pathology, therefore, is closely associated with intranatal occurrences, and is in a sense intranatal. Further, neonatal pathology, being situated between ante- and postnatal conditions, throws light upon both. Its study makes clear many points both in the maladies of later life and in the anomalies of intrauterine existence. It is, therefore, well worth the attention both of the student of postnatal pathology and of the investigator of the problems of antenatal disease, deformity, and death.

(The lecturer then proceeded to illustrate the relations existing between neonatal and antenatal pathology by inquiring into the pathogenesis of some of the morbid states of the new-born infant, such as cranial deformity, visceral hemorrhages, jaundice, congenital paralyses, sclerema neonatorum, etc., and by demonstrating the value of taking into account the antenatal factor in this inquiry. He then continued as follows):

THE ANTENATAL FACTOR IN POSTNATAL PATHOLOGY.

It is evident that antenatal pathology plays an important part in determining the characters of the diseases of the new-born. For this reason alone it is worthy of study. To many, however, the diseases of the new-born infant seem comparatively unimportant when contrasted with the maladies of adult life or of childhood. Without admitting for a moment that this is the right view, either from the high standpoint of science, or from the more prosaic one of success in practice, I may yet adduce a few instances to show that antenatal diseases and deformities are directly concerned in the production of some of the maladies of adult life. The first are drawn from gynecology.

1. THE ANTENATAL FACTOR IN GYNECOLOGY.—Imperforation of the hymen is manifestly an antenatal condition, yet it rarely causes any trouble till the age of puberty is reached. With the commencement of reproductive life, and more especially with the establishment of menstruation, the hymeneal anomaly be-

comes the starting point of a series of morbid processes terminating in hæmatocolpos and hæmatometra with their attendant symptoms, general and local. Again, there may exist only a minute aperture in the hymen, and yet, as in the case reported recently by Albespy,* menstruation may go on and conception occur and the antenatal malformation be discovered only during the second stage of labor. Anomalies in Muller's ducts must have their origin at a very early period in intrauterine life, yet their effects may be long delayed. In two very remarkable cases put on record by Henrotin and Herzog† it would seem that extrauterine pregnancy was due in one instance to the presence of an accessory Fallopian tube, and in the other to a tubal diverticulum. In both instances abdominal section had to be performed, so that if the theory of these authors be accepted the antenatal anomaly was in part at least the cause of very dangerous occurrences in middle life. Fœtal diseases, as well as embryonic malformations, may project their baneful effects far into adult life. Fœtal peritonitis, for instance, may be the antenatal cause of intestinal occlusion occurring long after birth. When it has been chiefly pelvic in position it may lead on to the fixing of the uterus and annexa in abnormal situations, and may in this way produce much menstrual suffering after puberty and be the direct cause of sterility. I have met with two cases of fœtal peritonitis in the new-born infant in which there can be no doubt that such results would have followed had the children survived, for in one‡ the Fallopian tubes and ovaries were displaced upwards through the firm adhesions to the intestines, while in the other‖ the uterine annexa were fixed to the tissues at the floor of the pelvis.

2. THE ANTENATAL FACTOR IN OBSTETRICS.—It is scarcely necessary to cite instances of the effect of antenatal morbid states upon pregnancy and labor. They are numerous and need only be named to be recognized. Among others may be mentioned the congenital deformities of the pelvis due to maldevel-

* Albespy, D.: "Un cas d'intégrité de l'hymen chez une femme enceinte." *Gynéc.*, Ann. 3, p. 317, 1898.

† Henrotin, F., and Herzog: "Anomalies du canal de Muller comme cause des grossesses ectopiques." *Rev. de gynéc. et de chir. abdom.*, II., p. 033, 1898.

‡ Ballantyne, J. W.: "Peritonitis in the New-born Infant." *Tr. Edinb. Obst. Soc.*, XV., 50, 1890.

‖ Ballantyne, J. W.: "Fœtal Peritonitis." *Tr. Edinb. Obst. Soc.*, XXIII., 123, 1899.

opment of the sacrum, to premature ossification of the sacro-iliac synchondroses, to dislocation of the hip, and to the presence of antenatal exostoses growing from the margins of the pelvic inlet; labors complicated by these anomalies must necessarily be delayed and rendered dangerous. Uterine malformations also, such as the didelphic and subseptate or septate condition, do not exist without disturbance of the mechanism of parturition. Alongside of the well-known pathogenic factors in obstetrics (I refer to traumatism and septic and gonorrhœal infection) must, therefore, be reckoned the little-recognized antenatal influence due to congenital diseases and deformities of the uterus, its appendages, and the osseous cavity which contains them.

3. THE ANTENATAL FACTOR IN MEDICINE.—It is specially in the department of the diseases of the nervous system that the antenatal factor in medicine has been recognized. Without referring to conditions such as idiocy and deaf-mutism, the congenital nature of which is undoubted, I may instance the so-called obstetrical paralyses, Thomsen's disease, epilepsy, Friedreich's disease, and syringomyelia. Dana,* in his contribution to the pathology of hereditary chorea, comes to the conclusion that "the disease belongs to teratology"; and Féré† has advanced a teratological theory ("théorie tératologique") to explain the neuropathic family and its relations with heredity, morbid predisposition, and degeneration. Some writers have been inclined to exaggerate the importance of the birth-traumatism (the intranatal element) in such conditons as Little's disease or spastic cerebral paralysis, for the case of cerebral hemorrhage in a fœtus reported by Osler‡ in *Teratologia* in 1895 proves in the most convincing manner that hemorrhage into the brain may occur in an infant that has never been subjected to the traumatism of birth. It was that of a woman, aged twenty-three, pregnant six months, and ill with typhoid fever. She was also the subject of inherited lues. She died and at the autopsy the lesions found were those of the late stage of typhoid fever. There had been no signs of the supervention of labor during life, and the uterus contained a fœtus apparently about six months old, 32 cms. long, well formed, nails well developed. There appeared,

* Dana, C. L.: "The Pathology of Hereditary Chorea." *Journ. Nerv. and Ment. Dis.* XXII., 565, 1895.

† Féré, Ch., *La famille neuropathique.* 2d Edit., Paris, 1898.

‡ Osler, W.: "Case of Cerebral Hemorrhage in a Fœtus." *Teratologia*, II., 13, 1895.

however, to be general œdema of the subcutaneous tissues, the skin itself seemed to be infiltrated, and the serous cavities contained fluid. The brain was very soft. The right hemisphere was normal; but in the left occupying a large part of the centrum ovale was a cavity with ragged, irregular walls, containing a large recent clot which had broken through the ganglia into the lateral ventricle of the same side. The blood had also extended into the right ventricle. No special changes were noted in the arteries. In this remarkable case the mother died without the supervention of labor and consequently the head of the fœtus had not been compressed. Widal's serum test was not known at the time, but could it have been tried I believe it would have shown that the fœtus had been infected with intrauterine typhoid, and that the cerebral lesions were due to this. The specific fevers are well-known causes of the cerebral palsies which arise postnatally and there is no reason to doubt that they may act in the same way antenatally.

In other departments of medicine a partial recognition of the antenatal factor has not been wanting. This is specially true of dermatology, for it is admitted that many skin diseases are either present at birth or are evidently predisposed to antenatally. To name only a few, there are the various forms of ichthyosis, tylosis palmæ et plantæ, hypertrichosis, hypotrichosis, albinismus, and the nævi. Congenital heart disease, hæmophilia, and syphilis are conditions which profoundly influence the whole life of the individual who is unfortunate enough to be thus handicapped antenatally; and recent observations go to show that congenital tuberculosis is a much more important factor in pathology than has been hitherto supposed. Chlorosis also and other blood disorders are now known to be often associated in a very striking way with antenatal malformations, and in the specialties of the eye and ear there are many morbid states that are undoubtedly antenatal and which produce results not only at birth but even late in adult life.

4. THE ANTENATAL FACTOR IN SURGERY.—It is, I think, a very striking fact that most of the recent advances in surgery have occurred in the treatment of deformities and malformations. Orthopedics is at present one of the progressive branches of practice, and it cannot be doubted that the more the causation and mode of production of deformities are understood the more rational will their treatment become.

It will be noted that I have endeavored to prove the title of antenatal pathology to a place among the practical branches of medical study by demonstrating the manner in which conditions arising before birth may project their effects far into postnatal life and profoundly influence the health of the adult no less than that of the infant or child. I have adduced no other reasons for its investigation, although these will emerge as the subject opens out. I can, however, imagine the objection being raised that while all this is true with regard to congenital diseases and the minor malformations, the study of such out of the way things as monstrosities can have no useful bearing upon general medicine and surgery. This objection may be answered by the assertion, the truth of which I hope to prove in another lecture of this series, that teratology is governed by the same laws as rule other branches of pathology, and that the causes of monstrosities are simply the causes of diseases acting upon the organism at a very early period and under very peculiar environmental conditions. This being proved it will follow that discoveries in teratology may be utilized in the investigation of pathological states which have no direct relation to teratology.

ANTENATAL PATHOLOGY AND THE OTHER BRANCHES OF MEDICINE AND BIOLOGY.

Antenatal pathology (including teratology) has a more or less direct relation to nearly all the other branches of medical and biological study. Its connection with general medicine and surgery has already been alluded to, and reference has been made to its less direct bearing upon gynecology; but with other subjects there are also bonds of union. It has, for instance, a very essential connection with pathology, for it is truly a part of it, although it has obtained but scant recognition in many text-books on the subject. In the same sense and to the same degree that the pathology of the skin or of the female generative organs belongs to pathology, the study of the morbid changes of antenatal life belongs to pathology. Professor F. G. Gade, of Christiania, a teacher of pathology, once said to me in conversation that it would doubtless be necessary to revise all our views of pathology in the light of recent investigations into antenatal pathology. It certainly seems more than likely that the whole question of tumors and their origin will

have to be approached from this side; while in such matters as immunity and predisposition the antenatal element must always play an important part.

Antenatal pathology, however, is not the exclusive possession of the pathologist. To the same degree and for the same reason that the dermatologist claims the right of specially investigating the pathology of the skin and the gynecologist that of studying morbid processes in the uterus and overies the obstetrician looks upon the diseases of the fœtus and the monstrosities of the embryo as peculiarly in his field of study. He is the first in order of time to see specimens on antenatal pathology and he can enjoy the great privilege (which, alas! he often neglects) of examining the part of his intrauterine environment which the infant brings with him into the world. I mean, of course, the placenta, membranes, and cord. Doubtless the obstetrician has not always availed himself of his special opportunities, and has shown an unlaudable tendency to hoard without dissecting the specimens which come into his possession. Nevertheless the work of such men as Simpson and Ahlfeld has done much to free obstetrics from this reproach. It must not be forgotten, also, that the obstetrician knows the clinical details of the case (often conspicuous by their absence in reports from the pathological laboratory), and that by him the way must of necessity be opened up for antenatal diagnosis. The relations of antenatal pathology with the other branches of medical and biological study may be briefly indicated. With anatomy it has a very real connection and with embryology a very close one; the normal and the abnormal throw light upon each other. A similar statement may be made about physiology. It is chiefly through the existence of a teratology of plants that our subject comes into relation with botany; possibly the botanist and the pathologist have not proved so mutually profitable as they might have done, certainly vegetable teratology, dealing as it does with comparatively simple structures, may be expected to elucidate the problems of malformations in the human subject. With zoology there exists a firm bond of union in the existence of comparative teratology (the study of *fœtal diseases* in animals has as yet been little more than begun); in fact one can hardly separate human and comparative teratology even in thought. Comparative embryology also has proved of great value in clearing up moot points in teratology,

while conversely teratology has helped in the study of zoology; this was very clearly seen in an inquiry which I recently made into the origin of the placenta.* It may be noted here that the invertebrata have of late been much used for experimental work in teratology. A connection with materia medica exists through pharmacology, for it has been experimentally shown that the substances that are pathogenic or toxic are also teratogenic (*e.g.*, microbic toxines, alcohols, prussic acid, etc.). Further, they are apparently teratogenic to the same extent as they are toxic or pathogenic, and it may therefore be possible to ascertain the degree of virulence of a toxine or a drug from teratogenic experiments alone. I have already dwelt to some degree upon the close affinities which exist between medicine and surgery and antenatal pathology, and it need hardly be pointed out of what importance the study of the latter must be to the practitioner who devotes himself to pediatrics. Medical jurisprudence, also, must be counted as a subject containing many matters (*e.g.*, the social and political rights of pseudo-hermaphrodites, questions of identity, and of concealment of pregnancy, etc.) upon which antenatal pathology can throw light. Finally, inasmuch as the general practitioner may be regarded as a physician specially skilled in surgery and obstetrics, and well versed in pediatrics, gynecology, and the diseases of the eye, ear, and skin, so upon him also antenatal pathology has claims which are not altogether imaginary.

24 MELVILLE STREET.

Infantile Scorbutus.—Netter (*Bulletin et Mémoire de la Société médicale des Hôpitaux de Paris*) reports a case of a well-developed child, aged ten months, with scarce an indication of rachitis, living in the best hygienic conditions, who suddenly became ill with pains, pseudoparalysis, and swelling of the legs. Subsequently there developed two tibial subperiosteal hemorrhages. Under antiscorbutic treatment there was rapid recovery. No cause could be detected with the exception of milk that had been subject to prolonged sterilization.—*University Medical Magazine.*

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* Ballantyne, J. W.: "The Occurrence of a Vitelline Placenta in the Human Subject." *Scott. Med. and Surg. Journ.* II., 296, 1898.

Clinical Memoranda.

A CASE OF ACUTE IODOFORM POISONING.*

BY B. B. MOSHER, M.D.,

Brooklyn.

On October 18, 1896, I operated on a boy six years old for empyema at the end of the fourth week of his illness, excising a portion of the eighth rib in the post-axillary line, giving vent to about one-and-a-half pints of creamy pus. A drainage tube was inserted, the dressing applied, and the patient promptly rallied from the operation, having taken but two-and-one-half drachms of ether.

The discharge was profuse during the first twenty-four hours and moderate during the next two days, with temperature 99° and pulse 100.

At two o'clock of the third day, at the redressing, the drainage tube was left out and a wick of iodoform gauze was substituted, the cavity having been irrigated with sterilized salt solution.

At 4 P.M. on the same day the child complained of tasting "very bad medicine." Soon he became nauseated; emesis came on and was incessant. The nurse at 6 P.M. reported to me the above symptoms. I arrived at seven o'clock and found the boy in the following condition: Very restless, vomiting incessantly, cold, clammy skin, pupils widely dilated, extremely thirsty, delirious, pulse weak and thready, incontinence of urine (dark and cloudy), diarrhœa, temperature 105°, and an indistinct general erythema. In fact, death seemed imminent, as he was in a state of general collapse.

I quickly removed the iodoform gauze, which was followed with but little discharge; gave the patient warm salt solution per rectum, hypodermics of whisky, spartein, and strychnia, nitrite of amyl by inhalation, and some diluted lime water per mouth. In two hours, to my surprise and satisfaction, the temperature had dropped 1½°; vomiting was less; the pulse was better; there was less delirium, and his condition continued to improve until, at the end of thirty-six hours, every bad symptom had disappeared. His temperature was 99° and his pulse 108, and he said he felt "good." At the end of four weeks the wound had entirely healed, and the child was perfectly well. There was no desquamation. Iodoform poisoning seems the most reasonable explanation of the peculiar condition appearing on the third day.

202 Schermerhorn Street.

* Read before the Kings County Medical Association, Dec. 14, 1897.

SUBNORMAL TEMPERATURE DURING AN ATTACK OF MALARIA.*

BY CHARLES G. LUCAS, M.D.,

Louisville, Ky.

The subject of the following report is a boy seven years of age whom I have seen several times during the last year, each time in a malarial attack. He has been taking one-drop doses of Fowler's solution after meals for several months. I saw him a month ago, and found him with a chill and a temperature of 104° F. I put him on a mixture of quinine, and the next morning his temperature was down to 99° F. I saw him the following day (Monday), having told his mother that he would probably have another rise of temperature; I found it 102° F. The quinine mixture was continued, and his mother in the meantime had given him some calomel. I ordered quinine continued, and went to see the boy on Wednesday, finding his temperature normal. At 11.25 that night they sent for me. The mother told me that the child had been up for a few minutes in the evening, and was almost immediately put back to bed; that later she went to the bed-side and laid her hand on his forehead, finding it very cold; she then felt for his pulse, and not finding it, she became very much alarmed, and I was sent for. I saw the boy an hour later. During the twenty-four hours previous he had taken fifteen grains of quinine. My thermometer does not register lower than 95° F. I shook the mercury down to 95° F., put the thermometer under the child's arm, and it remained at 95° F.; his temperature under the tongue was 95°, and also in the rectum 95° F. The instrument was allowed to remain in each place five minutes in taking the temperature. The mother had a thermometer which registered 94°; I shook that down to 94° and made similar tests, and it remained at 94° F. The boy's pulse was very feeble, and 66 to the minute. He was asleep when I reached the house, and was awakened; he said he felt all right.

I applied heat externally, and gave him $\frac{1}{60}$ grain of strychnine with $\frac{1}{100}$ grain of nitroglycerine, and 30 minims of aromatic spirits of ammonia every hour. Two hours after I had given him the strychnine and nitroglycerine, the same dose was

* Reported to the Falls City Medical Society.

repeated. I remained there all night. About four o'clock the mother called me, saying she thought the child was very much worse. I found his temperature 95½° F., pulse 76. At 7.30 A.M. his temperature was normal, pulse 90.

This case was of particular interest to me as I had seen a case previously in an adult where the temperature fell decidedly below normal with a pulse which was hardly perceptible, and in that case, thirty-six hours after the attack began, the patient passed a quantity of blood from the bowel. There was no reason to suspect intestinal hemorrhage in the child's case, but I watched the stools carefully. No evidence of hemorrhage was found. I report the case because the temperature recorded is the lowest I have ever seen in a child. The child was accustomed to quinine, having taken it in rather large doses.

Dr. W. F. Boggess, in discussing the case, said that the question of subnormal temperature was one of considerable interest. We frequently see subnormal temperature in children, and occasionally in adults. He had seen it usher in acute diseases in the prodromal stage, and had seen it also after typhoid fever and after pneumonia. A case of pneumonia came to the clinic the week before with a temperature of 95½° F., the disease having lasted several days. Resolution soon afterward took place and the patient made a good recovery. He had also seen a case in the children's hospital some time ago where a child with typhoid fever had a subnormal temperature for a week or ten days.

In shock after hemorrhage into the bowel in typhoid fever we have subnormal temperature; we occasionally have it also in hematuria; in a malarial attack, just prior to death, the temperature drops very low sometimes. One could understand how quinine in a person particularly susceptible to it, by lowering the vital powers, by its effect upon the heat generating centres, by opening the pores of the skin, might produce a subnormal temperature. He had never seen any bad results from low temperature. As a rule under proper stimulation the patient soon rallies.

RHEUMATISM IN A YOUNG INFANT.*

BY EWING MARSHALL, M.D.,

Louisville, Ky.

I delivered a child six weeks ago, and at the end of two weeks the mother developed pain in her right forearm, with also some slight swelling. I was called, however, to see the child because it had at the base of the right thumb a swelling; there was also some swelling about the right foot of the child, with evidence of pain.

There was no history of syphilis, nor was there anything about the child at birth to indicate specific trouble, and I thought possibly it was a rheumatic condition, though in a child so young that is extremely rare. I gave some iodide of potassium to the mother and at the end of three days the pain of which she complained in her arm had disappeared. At the end of a week the swelling in the child's hand and foot began to disappear and ten days afterwards it would allow me to move the hand without crying. The mother brought the child to my office recently four weeks after it had been under treatment, and the swelling was entirely gone. I could move the hand and foot freely without any evidence of pain. I am convinced that this was a case of rheumatism, though some septic condition is to be thought of.

Sarcoma of the Intestine in the Child.—Ablan has collected in his thesis (*Des Fibromes Embryonnaires* [*Sarcomes*] *de l'Intestin chez l'Enfant*) ten observations of intestinal sarcoma in childhood, all of which were of the round-celled variety. The disease occurs at all periods of childhood, and may not infrequently be of congenital origin. Its evolution is extraordinarily rapid, terminating fatally usually within two months after its apparent beginning. Heredity was noted in none of the cases, but direct traumatism was mentioned in two instances. The existence of metastatic foci in the viscera has been noted in three-fifths of the cases—in the liver and then in the kidneys most frequently. The development of glandular metastases in regions more or less distant from the primary focus has been noted in equal frequency with the visceral metastasis, but in only one case was there a generalized involvement of the lymphatic glands. —*American Journal of the Medical Sciences.*

*Reported to the Louisville Clinical Society.

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FEEDING CHILDREN OF WEAK DIGESTION.

We are well aware that many practitioners feel that pediatric workers have talked so much upon the subject of milk and infant feeding as to have become tiresome. Notwithstanding all that has been said, however, the rank and file of the profession have not made great advancement in the feeding of young infants, particularly those of weak digestion. It is undoubtedly true that the subject is becoming more complex and trying, for the difficulties experienced in rearing children under the adverse conditions imposed by modern civilization are steadily becoming greater. The necessity, therefore, for more general and more careful study of artificial feeding is becoming more urgent. The general practitioner is still altogether too prone to give ready-made foods, and to fall back upon that stronghold of ignorance, that "there are many children who cannot take milk."

We wish to refer briefly to a single error which is extremely common in the feeding of children whose digestive power is below the average, either from weakness of constitution or from antecedent digestive disorders. That error consists in prescribing too strong mixtures. The secret of successful feeding is to give a food which the child can digest. Age and weight are but partial guides in many cases. The key to success lies in

putting the strength of the mixture down to so weak a point that the child can digest it, and to then gradually work up to the point of tolerance. It is best in many of these cases to put the strength down at once to 1.5 per cent. of fat, and .75 per cent. of proteids, or even lower. The sugar strength is of less importance. The strength of the mixture should then be changed every two or three days until it has reached a satisfactory point.

One of the secrets of the success obtained by many specialists in feeding these children of weak digestion lies in this single point: They boldly put the mixture down to very small percentages, notwithstanding the fears of the mother that the child will not get sufficient food. This is, moreover, the secret of the easy digestion of condensed milk. In a one-in-twelve dilution of condensed milk, the strength most commonly used, we have a food that contains but one-eighth the amount of fat and one-third the amount of proteid found in normal breast milk. The fact that children do no worse on these excessively weak condensed milk mixtures is but one of many proofs that they commonly receive more food than they require. If the doctor who is wedded to the use of condensed milk would not make his fresh milk mixtures four or five times as strong as his condensed milk mixture, he would be much better satisfied with fresh milk.

We would urge every practitioner who ever attempts to feed a child artificially to study the subject of infant feeding as it is presented in the recent text-books on pediatrics, and to make himself familiar with the percentage method. In no other way can he form an adequate opinion regarding the actual composition of the food he is prescribing.

MILK MIXTURES.

There is still a strong tendency apparent in the profession to use some man's "mixture." A's mixture is first tried; if the baby does not thrive, B's mixture is tried, and then C's. These

mixtures belong to the dark ages in the history of infant feeding. They were composed in the endeavor to form a mixture of cow's milk as nearly as possible like the theoretical average of breast milk.

The scheme of feeding all children on the same food was, however, foredoomed to failure. All breast milk is not the same; all children would not thrive at the same breast. Furthermore, no artificial food, however closely it may approximate it chemically, can be made identical with breast milk. Some children can take cow's milk in the same percentage strength as average breast milk. Many others cannot digest the proteids and even the fat of cow's milk as readily as those of breast milk. Each child varies in its capacity in this direction. Hence, varying proportions of these elements are required. No single mixture, therefore, is adapted to all cases, and no series of a half-dozen mixtures may be found to contain the exact one required. Most of the mixtures that have been proposed contain about 4 per cent. of fat, 7 per cent. of sugar, and 2 per cent. of proteids. If the cream, as often happens, is of too great strength, the percentage of fat is greatly increased. These percentages, while theoretically approximating those of breast milk, are greater than many children can digest. In fact, very few children under six months can digest perfectly milk of this strength.

But it may be asked whether numerous mixtures have not been proposed by recent authors. This is apparent, not real. The *mixture* proposed by the writers of ten or twelve years ago was a single formula designed to produce a food identical in chemical composition with breast milk. Rotch, Holt, and other writers of the last five or six years, have not pursued such a course. They have advocated the use of a food of a composition suited to each child, as they would write a prescription adapted to each case. They have proposed certain percentage strengths as a working basis for various ages. These are simply guides and general outlines, it being designed that each child shall have the food which experience finds suited to its digestive power.

For the purpose of home modification it has been necessary to give numerous formulas. They are quite different, however, from the old milk mixture. They are simply given to indicate how various percentages may be obtained, and are not to be used blindly as the proper food for a certain age. The scheme of modified milk and percentage feeding consists in giving to the child the percentage of each ingredient that it is believed will be best for him, thus making a special formula for each case. The formulas of the text-books are to be used only as aids in securing these percentages. No single formula and no set of formulas are given as being an adequate food for all children. *Modified milk* thus differs radically and completely from the old-time *mixture*.

The term *modified milk* has, no doubt, misled some practitioners. A far better term is the one recently proposed by Kerley, of New York, namely, *adapted milk*. This term signifies what modern workers have attempted to do—to adapt the milk to each infant.

SEDIMENT AND BACTERIA IN MILK.

Under this title one of our contemporaries calls attention to the blackish sediment which is so often seen at the bottom of vessels containing milk. It speaks of this sediment and a method of getting rid of it in the following words:

"This impurity is invariably got in the process of milking, and its amount is a good though somewhat rough measure of the uncleanly conditions of the byre, the cows, or the milking. Renk has shown that this dirty sediment consists largely of dried cow's excrement, and Flügge and others have shown that to it is due in large measure the presence of those spore-bearing, very resistant, and peptonizing micro-organisms associated with the causation of summer diarrhœa of children. In order to free milk from this sediment, Plaut recommends that, immediately on delivery at the house, the milk be put into a cylindrical vessel having two side openings, one about the middle and the other

about an inch from the bottom, both closed with corks. After forty minutes' standing in a cool place, the upper portion of the milk, which contains most of the cream, is drawn off, and then the lower portion as far as the lower opening. This prevents the loss of cream, which would occur if it were all drawn off at the lower opening. The two portions are then mixed. The milk left in the vessel contains little fat, and nearly all the sediment. The rest of the milk contains proportionately to the original milk a greater amount of fat, and is almost free from the peptonizing organisms. He has found that milk, which, even after boiling for ten minutes, caused diarrhœa among the children fed on it, could be used quite safely after this treatment."

This is strikingly at variance with the observations reported by Dr. Freeman in the August number of the ARCHIVES. He found by repeated experiments that the fat globules carried the bacteria upward as they rose, so that in some cases the cream contained three hundred times as many bacteria as the milk. Even when the milk is thus partially cleansed, Dr. Freeman does not, however, advocate its use in the raw state for infants, believing that there is a sufficient number of bacteria left to render it unsafe. The safest food attainable is none too good for an infant.

CLEAN MILK.

The procedure referred to in the preceding article is extraordinarily crude and inefficient. Reform can never be secured by temporizing with half-way measures of this kind, even if demonstrated to be as effective as alleged. It would be far better to spend one's energies in efforts to prevent these disgusting sediments rather than upon such ineffectual means for removing their dangers. It is no chimerical scheme to produce clean milk. It is being done in numerous places in this country every day, and at a profit too. Milk in which a black sediment can be detected is unfit for food under any circumstances and should not be tolerated.

We have been criticised for devoting too many of our pages to the subject of producing clean and wholesome milk and of giving it too much editorial attention. We shall continue the same policy, however, for the constant appearance in the medical journals of articles of this tenor demonstrates that we are still the voice of one crying in the wilderness.

The profession is not yet fully awake to the importance of clean milk, nor has it studied sufficiently the methods which experience has taught are necessary to obtain it. Medical men are the natural leaders in the movement to secure good milk. They should not tolerate half-way measures. They should not be found calmly accepting milk which even after boiling for ten minutes causes diarrhœa among children and proposing a measure by which it can be used "quite safely." It reminds one of the verdict of the jury which stood at ten to two for conviction which the foreman announced as "almost guilty." The time is past for being content with a food that is "almost safe."

ARTHRITIS DEFORMANS DURING CHILDHOOD.

The paper appearing in the present number on this subject is a most valuable one, as it classifies very clearly the various joint affections commonly designated by the term arthritis deformans. The authors have rendered a service in making clear the clinical and pathological differences in these conditions.

Arthritis deformans is an extremely rare disease in childhood. In 1896, Dr. Henry Koplik reported a case of great interest in the pages of this journal. At that time only eighteen cases had been recorded. A few months later Dr. P. F. Barbour reported another case in the ARCHIVES. A typical case was also reported at about the same time by Dr. William Osler. In a recent number of *Revue mensuelle des Maladies de l'Enfance*, Delcourt writes upon the subject, and states that he was able to collect but thirty-eight cases in all literature.

He reports a case of a girl, aged four and a half years, in whom the disease began insidiously with vague and indefinite

pains in the muscles and joints. As abstracted by the *University Medical Magazine*, the small joints of the hands and feet then became swollen, and at the end of six months the child was unable to walk. At the end of two years, during which time there was gradual progression of the disease, the patient died, as a consequence, as revealed by the necropsy, of acute osteomyelitis.

Delcourt, with Strümpell, distinguishes two stages of the affection: chronic arthritis with localization of the diseased process to the synovial capsule, and the periarticular tissues; the second results from the first, by the extension of the process to the cartilages and the bone.

Heredity is thought to play some rôle in the causation of the disease; its exciting factor being, however, rather defective nutrition. In contradistinction to some authors, Delcourt believes that there exists a certain antagonism between scrofulous tuberculosis and this affection—that is, they rarely occur together. In the differential diagnosis there are to be especially considered white swelling, gout, and arthritic affections, occurring during the course of certain infectious diseases.

The most effective treatment, considering the progressive tendency of these affections, consists in proper hygiene, the internal administration of sodium salicylate, arsenic, iodine, and externally, baths, electricity, and massage. In the case of arthritis deformans reported by Koplik, the subsequent history of which we were for some time cognizant, undoubted improvement appeared to result from faithful and persistent massage.

FUNCTIONS OF THE MEDICAL JOURNAL.

Several of our readers have expressed a desire for more articles upon what they designate the ordinary or common diseases. Some of these have also suggested the publication of clinical lectures. This request will be heeded, and an effort will be made during the coming year to maintain such a department and to render it a feature of the journal. Such lectures

were frequently published during the earlier years of the ARCHIVES. They had been discontinued, as it had seemed to us that the results were not commensurate with the space they occupied. They will be resumed, however, and given another fair trial.

Recent expressions of opinion regarding the ARCHIVES have been so flattering and commendation has been so generous that we feel impelled as far as possible to heed every suggestion. Upon a single point, we feel that a few of our readers fail to appreciate fully the functions of medical journals, particularly of those devoted to a special subject. The most important function of such a journal is to record medical progress. It can make no attempt at teaching rudiments. The foundation of pediatrics, as of all branches of medicine, should be laid in the college. If this has not been done, it should be accomplished largely by the study of text-books. The college and the text-book are the means especially devised for giving a comprehensive knowledge of medicine. They can discuss each disease in a complete and systematic manner. Most magazine articles are more or less fragmentary, and are designed to elucidate certain phases of a subject or report some new fact. The editor must presuppose a certain amount of knowledge on the part of his readers, the greater part of whom certainly possess it. If he admits to his pages details of too elementary a character, or articles upon diseases which are fully described in the text-books, and upon which nothing new is being learned, he is doing injustice to the majority of his readers. The journal is not justified, as is the text-book, in publishing articles which contain nothing new. The text-book is primarily a record of what is already known. For the sake of completeness, it is justified in including chapters which present only old and established facts.

The magazine, on the other hand, is the record of what is being learned from month to month; it is a chronicle of medical progress.

The text-book is important in its sphere of presenting subjects in their entirety, thus laying the foundation of knowledge.

The medical journal is invaluable in its sphere of recording the progress of knowledge, of supplementing the text-book, of furnishing new ideas, and of keeping its readers intelligent and up-to-date.

REDUCTION IN PRICE OF THE "ARCHIVES."

After publication for sixteen years at three dollars, the reduction in price of the ARCHIVES to two dollars is worthy of notice. This reduction has been made in conformity with the prevailing tendency to reduced cost in every class of literature. Both professional and literary magazines are now produced in large numbers at prices far below those of ten years ago. With a well-known literary monthly, which has recently made a material reduction in price, we can say, "quality enriched; size the same."

Reduction in price would have been made before this time had it not been for the great increase made in the size of the journal four years ago, together with a policy of liberal illustration and various other improvements which largely increased the cost of production. No economy has ever been practised in the direction of illustrations, typographical and press work, proof reading, and the hundred details which are necessary to the making of a handsome and mechanically perfect journal. While our readers are, perhaps, not always conscious of all this, they would quickly detect any carelessness or attempt at economy in these directions and would feel it to be a detriment. While it would be possible to issue the ARCHIVES at a greatly reduced cost, no such reduction will be made. The reduction in price will be followed by no reduction in mechanical, literary, or scientific standing. On the contrary, it is rather the intention that the standard shall be advanced.

Bibliography.

Notes on the Feeding of Infants. By W. Langford Symes, F.R.C.P., *Physician to the Dublin Orthopedic Hospital; Physician to the Home for Destitute Children, etc.* Dublin: Fannin & Co. Pp. 43.

The brief notes of which this work is composed, apparently aim at being nothing more than an outline guide to the subject of infant feeding. The book contains many very excellent things, but it seems to us that the author has tried to condense the subject too much. The chapter upon breast feeding consists of a table upon the times and intervals of feedings, and part of one page of text. That page is very good so far as it goes, but it is inadequate.

The chapter on artificial feeding consists of four pages. Nothing is said of percentage feeding and the author does not seem to have grasped the real meaning of modified milk. He gives a formula for "humanized milk," which he says is "a safe general mixture for use from one to nine months old." The proportions are given in ounces but the measurements, the author says, can be more easily remembered by wineglassfuls, while "one lump of sugar" is to be added to each feeding. This certainly is not putting the subject of infant feeding on the ground of an exact science. The author assures us, however, that "this mixture agrees well even with the most delicate infants." The infants of Dublin must be more easily suited than those of New York. He quotes in addition a formula from Rotch, which he says "most closely resembles human milk and fulfils all the requirements." We know that Dr. Rotch will be pleased to hear of the success of his *mixture*. We feel sure that he is not yet aware that he has devised a single formula that will fulfil all the requirements.

The chapter on weaning is very good; several formulas are given made up in ounces and drachms. The chapter on milk and the feeding bottle is an excellent one and the whole section devoted to the feeding of infants over one year is also good.

An appendix contains many useful hints and formulas and also thirteen food mixtures, with the percentages which they represent, taken from Dr. Rotch. These will prove of much value to the reader if he uses them as their author intended, not

as so many *mixtures* to be used one after the other until one fits the case, but simply as indicating how to obtain certain desired percentages.

A Prescription Book of Infant Dietetics for the Home Modification of Milk. By A. B. Spaech, M.D. Chicago, 1899.

This little book consists of detachable prescription blanks for feeding mixtures. There are special blanks for feeding prescriptions from birth to the twelfth month, after the twelfth month, and for diarrhœal difficulties. Each blank contains, also, numerous directions for the mother and recipes for making broths, whey, and other preparations used in the feeding of children. The covers contain tables and other instructions designed to aid the physician in his food prescribing. The percentage method of feeding is advocated and the charts are arranged with sole reference to that method.

Upon most points the directions are admirable, and, altogether, the prescription book is an excellent one, and will prove of great aid to the general practitioner. The chief point of criticism is upon the methods adopted for pasteurization. Here the author, in his endeavor to simplify the process, adopts one which we fear will not always prove adequate.

The Hygiene of the Mouth: A Guide to the Prevention and Control of Dental Diseases. By R. Denison Pedley, F.R.C.S., Ed., L.D.S., Eng. *Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London.* With numerous illustrations. London: J. C. Segg & Co. Philadelphia: S. S. White Dental Company. 1899. Pp. 93.

There is an increasing recognition of the importance of systematic care of the teeth. If disease of the digestive tract in children is increasing, as it seems to be, it is clearly evident that any departure from the normal dentition places the child at a serious disadvantage. The author has written before upon the care of children's teeth, and he devotes a large part of the present volume to the same subject. Not only is the comfort of the child disturbed by carious teeth, but his digestion is impaired, his nervous system irritated, and each diseased tooth is an open door for the entrance of septic bacteria. The book, while not large, is written concisely and plainly, and can be read with profit by every practitioner.

Current Literature.

MEDICINE.

Rolleston, H. D.: Enlarged Thymus Gland and Sudden Death. (From *Diseases and Primary Tumors of the Thymus Gland.* 1898.)

In a monograph on tumors of the thymus gland the author considers in considerable detail the relation of that gland when enlarged to sudden death. In many cases of sudden death occurring in adults who have previously, as far as ascertainable, been in fair health, there is very little found at the autopsy to account for death, which is often due to cardiac failure or syncope; this a fact within the experience of every pathologist. In some similar cases occurring in earlier life a large thymus is the only gross change found, and is therefore thought to be the cause of death.

It is possible, however, that the presence of a large thymus is sometimes a mere coincidence. On the other hand, there are various ways in which an enlarged thymus gland has been thought to precipitate death. Death has been referred to sudden engorgement of the thymus mechanically interfering with respiration by compressing the trachea against the spine. This mechanical effect is much more likely to be effective if the head and neck are extended on the trunk, as may occur when the head is allowed to fall backward over a pillow. Under such circumstances the enlarged thymus is fixed by the manubrium sterni in front, and the lordosis of the spine compresses the trachea between the bodies of the vertebræ behind and the thymus gland in front. This compression is then likely to occur at the junction of the cervical and thoracic portions of the trachea.

It is said that in rickety children with muscular debility the head may fall back, and that the feeble child may not be able to flex it; if there is a large thymus present the trachea may be so narrowed that death results.

This explanation for "thymic asthma" probably accounts for some cases, but thymic asthma and laryngismus stridulus have been somewhat mixed up. Some cases regarded as thymic asthma have been found to be associated with thymus glands of normal or small size, and are therefore probably examples of that rare event, death from laryngismus stridulus. Some authorities, in fact, consider that most, if not all, of

the cases of so-called thymic asthma are cases of laryngismus stridulus in which as a coincidence the thymus has been enlarged. There is at any rate absolutely no evidence that laryngismus stridulus is solely due to an enlarged or hypertrophied thymus.

Probably many cases regarded as thymic asthma are really due to laryngismus stridulus, while there seems to be no doubt that the enlarged thymus can, if the head be retracted, compress the trachea, so that the view that the enlarged thymus can mechanically obstruct respiration must not be given up.

It has also been suggested that the enlarged thymus may produce and throw out into the circulation a large amount of the substance which endows the watery extract of the gland with the power of lowering the blood-pressure, and that fatal syncope is thus produced. This would account for cases where death has occurred from cardiac failure and not from asphyxia; but it is difficult to see why the toxic effect, in a lesser degree, should not have been manifested more frequently in the same individual, and why it should only be exerted in a single attack so intense as to destroy life. Through an ingenious suggestion, and one in touch with the spirit of the present time, which explains everything by a toxin, it cannot be said that it is in any way proved.

A large thymus may press upon the heart and vessels, and so embarrass their action as to lead to cardiac failure. Another mechanical effect of an enlarged thymus that is quite conceivable is pressure on the vagi; some sudden movement might easily so stimulate the vagi as to stop the heart in diastole.

Another and important explanation of the association between the occurrence of sudden death and the presence of an enlarged thymus gland is that the enlargement of the gland is part of the general condition called lymphatismus, status lymphaticus, or status thymicus. The subjects of this diathesis have a pale, transparent skin, and are well covered with fat; the tonsils, lymphoid tissue at the base of the tongue, the lymphatic glands, thymus, and spleen are large; there are other congenital changes —for example, in the eyes, and hypoplasia, or insufficient development of the aorta.

These children, like rickety infants, are liable to laryngismus stridulus and tetany, and, according to Escherich, are in a condition of latent irritability of the nervous system, and are therefore especially likely to be the subjects of convulsions, and to

die from cardiac failure without any very sufficient cause. Thus deaths during or after emotional disturbance, anæsthetics, small operations, and other trivial causes may be explained.

Osler speaks of one such case proving fatal during the administration of anæsthetics for adenoid vegetations. The tragic death of Professor R. Langerhans' son in 1896, immediately after his father had given him a hypodermic injection of Behring's antidiphtheritic serum in order to protect him against infection from a case that had risen in the house, is explained by Escherich as being due to lymphatism. More than 40 cases of sudden death occurring in lymphatism have been recorded.

To sum up—(1) An enlarged thymus gland may be found as a coincidence in cases of sudden death; for example, in laryngismus.

(2) It may mechanically cause compression of the trachea, especially when the head and neck are extended, and so give rise to asphyxia.

(3) It may mechanically compress the heart, or possibly the vagi, and so lead to cardiac failure.

(4) An enlarged thymus may be part of the status lymphaticus, which is a condition where death may follow apparently inadequate causes.

Haushalter and Richon: Syphilis (Gummata) of the Kidney. (*Arch. de Méd. des Enfants.* Vol. i., No. 12.)

A girl baby, nine months old, very poorly nourished, was brought under observation for a bronchitis, and died in convulsions the same day. The family history was obscure. At the autopsy nothing of note was found in any organ except the kidneys. These were pale, and on the surface of the left appeared three small, round, regular nodules, one of them as large as a pea. The renal substance around these masses was softened. On section they were of a semi-gelatinous consistency, and sharply marked, by their deep violet color, from the pale cortex. In the right kidney there was but one nodule. Under the microscope the small masses were found to be composed of young connective tissue, with small interstitial hemorrhages, and a distinct peri-arteritis in the neighboring vessels; also some glomerulitis. Excluding both tuberculosis and sarcoma, the lesions are to be diagnosed as multiple gummata. While syphilis (hereditary) seems to affect the kidney but rarely in children, it may cause either a nephritis with marked interstitial change or else gummata, usually multiple.

Ausset: Diphtheritic Angina and Laryngitis in a Patient Nine Months Old. Injection of Serum. Intubation for Twenty-five Hours. Recovery. (*L'Echo Medical du Nord.* Vol. ii., No. 48.)

The child was delicate, bottle fed, and when first seen had been ill with diphtheria two days. Although no membrane was visible in the throat, a culture showed Klebs-Loeffler bacilli. Dyspnœa was present and increased, necessitating intubation, which gave instant relief. Upon removing the tube on the following morning, a piece of pseudo-membrane was coughed up, and toward night the tube had to be re-inserted. Twelve hours later the tube was permanently withdrawn; the general condition improved very much, only one serum injection being required. The child recovered perfectly, with the intercurrence of a mild bronchitis.

It is the age of the little patient which makes the case interesting, as the author has never seen so young a child recover from croup. He attributes the excellent result to the early use of the antitoxin serum, and pleads for its immediate use even in the case of very young infants, before they have acquired a broncho-pulmonary infection, to which they so readily succumb.

Grigorieff: Bacteriological Examination of the Throat and Nose in Diphtheria Convalescents. (*Arch. de Méd. des Enfants.* Vol. i., No. 8.)

Forty-six cases of diphtheria were studied, the diagnosis in every case being confirmed by bacteriological examination. Cultures were then taken when the false membrane disappeared, and repeated throughout convalescence until several successive examinations proved the absence of diphtheria bacilli. In thirty-six cases the cultures were negative within one week after the exudate had gone from the throat. Five cases still had the bacilli in the second week, and in five they persisted until the end of the third week. The organisms disappeared from the nose about as quickly as they did from the throat.

It becomes evident, therefore, that cultures should be taken and examined before diphtheria patients are released from isolation, especially in children old enough to attend school. In hospitals, the convalescents should be separated from those in the acute stage of the disease; and the mouth, throat, and nose should be frequently rinsed, in addition to the serum treatment.

HYGIENE AND THERAPEUTICS.

Stewart, J. Purves: The Treatment of Chorea. (*The Edinburgh Medical Journal.* 1899. Vol. lxvii., No. 3.)

In the treatment of chorea, the first and all important thing to secure for every patient is absolute rest, physical and mental. Rest in bed should be insisted on, even in mild cases, for several weeks at least, and when the patient is allowed up, it should only be for a short time each day, gradually lengthening the time permitted to be spent out of bed. In severe cases, to prevent the patient from falling out of bed or hurting himself, it may be necessary to lay him on a mattress on the floor in the corner of the room, well padded with cushions or pillows, to prevent him from knocking himself against the walls. It will be found advantageous to keep a choreic patient in bed until his involuntary movements, on holding the hands horizontally in front of him, are very faint.

The diet should be nutritious and easily absorbed. The more food the patient can take the better. In severe cases, where there is difficulty in deglutition, or where, from mental dulness, the patient does not take enough nourishment, nasal feeding must be resorted to.

As to drugs, arsenic is the classical remedy. It is most safely given in small doses. Large doses of arsenic are recommended; but if they be persisted in too long, are not devoid of risk. Arsenic in large doses, administered for a lengthened period, not only induces a brownish pigmentation of the skin, but has sometimes produced very intractable peripheral neuritis.

Antipyrin is useful in some cases, but care must be taken not to give doses large enough to produce cardiac failure. The patient must, of course, be kept absolutely at rest during the treatment by antipyrin.

In cases of very violent chorea, chloral may be exhibited until the patient is rendered drowsy, but it must be administered with caution, bearing in mind that in such cases the chloral sleep may sometimes be followed by noisy maniacal excitement.

Finally, we must remember that chorea is a disease which is prone to recur. Each successive attack must be treated on the same broad principles—rest and feeding being vastly more important than medicinal therapeutics.

Kissel: A New Method of Treating Ulcerative Stomatitis. (*Archives für Kinderheilkunde.* 1899. B. xxvi., H. i., ii.)

The author in his out-patient and hospital service meets cases of ulcerative stomatitis occasionally which fail to respond to the customary methods of treatment; that is, cleansing washes of chlorate of potash, boracic acid, etc. In these obstinate cases he rubs the ulcerated areas with iodoform once daily. Three or four applications usually suffice to control the most obstinate cases.

Editorial: The Therapeusis of Suggestion in Children (*The Medical News.* 1899. Vol. lxxiv., No. 15.)

The modern physician has come to realize very clearly how potent an influence for good suggestion is in the treatment of patients. No matter how material the ailment, no matter how dependent upon gross morbid lesions, mental influence has a wonderful effect upon the course of disease, or at least upon the prominence of symptoms. Whether consciously or unconsciously we are constantly using suggestion in practice. Non-medical minds have come to realize this very fully.

Our little patients, the children, have not come to realize yet all the magic influence for health there is in the visit of the doctor. They do not brighten up to tell of their symptoms during the last twenty-four hours, nor wait for the doctor's examination to assure them that the disease is progressing favorably, and so be encouraged to take up courageously once more the battle for health. In many instances children associate the visit of the doctor with unpleasant disturbance of their peace, with discomforting examinations, perhaps with painful investigation of their illness and its causes. They do not welcome his coming; on the contrary, are only too glad to see him go, careless whether he should ever come again, hopeful that he will not.

This is, of course, an unfortunate state of affairs, and one that cannot be entirely ameliorated in every case. Much can be done, however, to remove some of the objectionable features of the doctor's visit. It is more or less necessarily attended with discomfort and inconvenience for the little sufferer, yet it may be so conducted as not to make the child utterly misconceive its purpose. The stories of even wild animals submitting to additional pain when already suffering a good deal, because somehow they had gained the impression that what was being done was for their good, are not entirely without foundation.

Certain individuals possess what, for want of a better word, may be called a magnetic influence in such matters that makes their beneficent purpose clear even to the animal.

Very young children also can be made to understand, if properly approached, that the doctor's bothersome visit is for their good. Certain it is that even when scarcely more than a year old they can learn to resent the doctor's meddling, and recognize his presence or even his title by fretfulness.

To win a child's confidence requires above all simple straightforwardness. If an examination is to cause pain the child should not be tempted to submit to it by the assurance that "it will not hurt," for the delusion serves but once and inevitably leads to loss of confidence. Frank explanation that it will hurt but not much, and then sincere efforts to keep this pledge are much better, though for the moment the child may be rendered unfriendly by the pain. If the confidence is gained and retained then the influence of suggestion may be used quite as powerfully as in the case of older people. The child's attention may be directed to its prospective cure, and to the expected good influence of the medicine and other remedial measures. Remedies that are not easy to take and other therapeutic measures that are a source of considerable discomfort will be more readily yielded to if the co-operation of the little patient is thus secured.

As for the direct influence of suggestion in many children's ailments it is not appreciated to a degree corresponding to its true worth. We know of a mother who has by direct suggestion influenced asthmatic attacks in a young child so as to greatly decrease their number and severity.

We know of another who has been able several times with a boy of four to influence the course of attacks of laryngo-spasm, and to practically prevent the feeling of exhaustion that follows them by carefully directed suggestion as to regular breathing. Once the boy's attention was called to the fact that he could breathe easier if he did it quietly, and then the suggestion that he was nervous, not sick, an absolute truth in the matter, made the after-effects much less marked.

Barnes, Albert C.: Glycerinized Vaccine Lymph. (*American Gynecological and Obstetrical Journal.* 1899. No. 9.)

The author reports extensive investigations made to determine the actual value of glycerinated lymph which has recently

come largely into use in this country. In Baltimore, for example, where for several months there has been a number of cases of small-pox, there were employed by the health authorities and physicians in private practice considerable over 100,000 tubes of glycerinized vaccine. Those vaccinated were periodically observed until the success or failure of the vaccination was determined. In not a single instance did small-pox occur in a person vaccinated with glycerinized lymph. Conservative estimates place the number of successful "takes" as 95 per cent. in primary cases. The vesicles in most instances were typical and uncomplicated with staphylococcic and streptococcic infection. The number of excessively sore arms did not exceed 1 per cent. of the total number vaccinated.

In Minneapolis, in one series of 3,045 vaccinations with glycerinized lymph there were 29 failures, all of which were in secondary cases, *i.e.*, those who had been previously vaccinated. In the same city a second series of 3,875 vaccinations resulted in 4 failures in primary cases and in 51 failures in secondary cases. All the data collected from Minneapolis show a proportion of 95 per cent. successful "takes" in primary cases and 75 per cent. in secondary cases.

Cleveland records show that widespread vaccination was practiced. Both glycerinized vaccine and points were employed at the beginning until results proved the vast superiority of the glycerinized lymph, when points were almost entirely abandoned.

In one series of 20,000 cases vaccinated with the glycerinized product, there was an average of over 90 per cent. successful "takes." Septic complications were almost entirely absent.

In Richmond, Norfolk, and Portsmouth, Va., no accurate records were kept of results obtained; but in these three cities there were employed about 120,000 tubes of glycerinized lymph. Extensive inquiry concerning results obtained place the successful takes over 90 per cent. In these cities the superiority of the glycerinized lymph over the points, in producing successful vaccinations and avoiding septic complications, were everywhere noted.

The author believes that his investigation proves conclusively that the recommendation of the United States Marine Hospital Service that "glycerinized vaccine only should be employed" ("Public Health Reports," January 9, 1899) is well substantiated by experience, because:

1. Properly prepared glycerinized vaccine is pure and free

from staphylococci, streptococci, and other pathogenic organisms which are invariably found (Copeman, Crookshank, Pfeiffer, Reed, U. S. A.) on vaccine points.

2. Glycerinized vaccine affords absolute protection against small-pox; vaccine points are uncertain in this regard.

3. Vaccination with the glycerinized products does not cause excessive inflammation of the vaccinated area. Cellulitis and inflammation of the lymph vessels and glands amounting at times to abscess formation is a not infrequent sequence of the use of vaccine points.

4. Vaccine points are apt to lead to a false sense of security, inasmuch as they induce a local staphylococcic or streptococcic infection, which is entirely distinct from true vaccination. Such a result is not protective against small-pox.

5. A high estimate of successful "takes" from vaccine points is by these and numerous other reports shown to be not over 60 per cent. in primary cases and a much lower percentage in secondary cases.

6. Glycerinized vaccine has been officially adopted by the governments and health authorities of the United States, Great Britain, Germany, France, Russia and Belgium. It should be universally adopted in private practice.

O'Donovan, Charles: Improper Food as the Chief Factor in the Production of Rickets. (*Journal of the American Medical Association.* 1899. Vol. xxxii., No. 11.)

The author's experience with rickets in a large dispensary class attended by a very poor class of children has been very great. With increasing acquaintance with this disease he is more and more inclined to lay the chief blame for rickets rather upon the faulty assimilation of improper food than upon an unsanitary condition of the household. This conclusion has been reached entirely from a clinical standpoint and after collating the evidence offered by a large dispensary clinic of excellent material. The improvement that does undoubtedly come later, even in extremely severe cases with most remarkable distortions, is coincident with the ability of the child to run about and so keep itself in the open air, but is not due directly to this fact; but in some measure indirectly, as it enables the child to digest and assimilate its food, which it has at last grown up to, and which is the same as it had received from its fifth or sixth month.

Fornaca, Dott. H.: Oil of Wintergreen in the Treatment of Chorea. (*La Riforma Medica.* 1898. No. 49, p. 578; *American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 4.)

Luigi states that not only is this useful in rheumatism, but it is an antipyretic in erysipelas and scarlet fever with diphtheria, an antiseptic in tuberculosis and other chronic diseases of the respiratory system when inhaled, and when given internally in certain diseases of the kidney and bladder. The daily amount varies from one and one-half to two and one-half drachms when given by the mouth.

Noting the rapid systemic effects when applied by inunction incorporated with an equal quantity of white vaseline upon a patient suffering from chorea, it was employed pure upon a second subject, to the daily amount of two drachms. Three cases are reported. It is beneficial not only when rheumatism is an important factor, but when no history of this is obtainable. The remedy is readily absorbed by the skin, showing its presence in the urine within six hours, yet not giving rise to any disturbance.

Joachim: The Secretion of Milk by Nursing Mothers. (*Centrablatt f. Innere Medizin.* 1896. No. 10; *Charlotte Medical Journal.* 1898. Vol. xiv., No. 6.)

The author had under observation 15 cases in which he attempted to increase the flow of milk by the use of somatose. Of these 3 are especially described. He formulates his results as follows: In a majority of cases there was an improvement of the appetite, the general health, and a quantitative and qualitative improvement in the lacteal secretion of nursing women. In a few, although in the minority of cases, even its prolonged and regular use proved unsuccessful. The practitioner must make use of the most diverse remedies, even when here and there a failure takes place. Hence it will be indispensable in conditions where it is desirable to influence the mammary secretion of nursing women. In contrast to Drews, however, Joachim does not regard its action upon the mammary glands as a specific one. He has observed, indeed, that the mammary secretion of nursing women is favorably affected only in cases, in which an improvement of the patient's appetite and general condition is simultaneously brought about. On the other hand, in cases in which the organism was not influenced by it, and the general

health remained bad, the mammary secretion was unchanged. In Joachim's opinion, therefore, successful results from somatose cannot be expected in all cases, although in the majority, because this preparation exerts an extremely beneficial influence upon the general health. In conclusion Joachim states that it would be interesting if experiments were made to determine whether, if it is given in the last months of pregnancy, it would influence the secretion of milk of the mother after the birth of the child.

Chase, R. F.: The Local Treatment of Pneumonia in Children. (*Boston Medical and Surgical Journal.* 1899. Vol. cxl., No. 15.)

This subject has attracted much attention during recent years and much has been written upon it. The views of different writers differ largely. The author first produces an abstract of a half dozen papers on this subject which appeared in this journal in April, 1896. These papers were by Swift, Holt, Griffith, Buckingham, Northrup, and Adams.

Various authorities who have written upon the subject since that time are also referred to. Jacobi says: "Warm poultices will greatly stimulate the bronchi. Their place is during hepatization, for the purpose of aiding absorption, not in the first stage of pneumonia."

Dr. Crandall: "Mustard paste is of great service."

Dr. Carr: "Counter-irritation to the chest, by means of a mustard paste or a mustard bath, at a temperature of 95°–100°, will loose the labor breathing, lessen the congestion and calm the nervous system. Poultices are not to be applied, as their weight and the need for constant renewal are reasons why they are harmful. Jackets of flannel and of flannel and oiled silk are much better than poultices, as the skin under them can be cleansed."

Dr. Holt: "Moderate counter-irritation, especially early in the disease, is usually maintained by the use of a mustard paste every three to six hours, and an oiled-silk jacket is worn throughout the attack. He prefers these to the use of poultices. 'Hyperpyrexia is best controlled by the cold pack'; has never seen any bad results when properly used."

Dr. Northrup: "Little treatment is necessary in most cases of lobar pneumonia, but, whatever you do, do not put a child with a temperature of 104°-105° and respiration at 60 in a hot poultice tightly wrapped about the chest."

Dr. Berg: "Children recover from croupous pneumonia under any treatment, even under the old-fashioned poultice treatment, which is the most barbarous I know of. Neither the oiled-silk jacket nor poultices should be used in pneumonia."

Dr. Koplik: "Poultices or cataplasms do not work any good, nor can their use be justified on any scientific grounds in any form of pneumonia."

Basing his opinions upon considerable experience the author reaches the following conclusions:

That poultices diminish pain when present, and that in doubtful cases the child often seems relieved.

That in bronchitis accompanying either form of pneumonia the râles are often diminished and the dyspnœa relieved.

That they have a soothing effect, not infrequently disposing a fretful, restless child to sleep.

That children rarely oppose their use.

That the object of their use should be to relieve the various discomforts of this affection, thereby helping to preserve the strength of the child.

The beneficial effects of poultices are due to their warmth and moisture, their mild counter-irritation. The chief objections made to their use are that their weight impedes respiration, that their renewal fatigues the patient, that they retain the bodily heat, and that they are nasty.

That there are many cases of pneumonia which do not require the use of a poultice or any other application. That there is still a place for the use of the poultice the author fully believes.

The mustard paste so much advocated certainly seems of benefit. Some believe it is capable of limiting the affected area when used in the earliest stage. Being one of the stronger counter-irritants, it must be used with some caution. Koplik's statement, that "the use of cataplasms cannot be justified on any scientific grounds," may be true. But is not our clinical experience a sufficient guarantee for their use?

No great claims are made for the cotton jacket, but it is much better than a half-dozen thicknesses of superfluous clothing about the chest.

For hyperpyrexia the author has relied entirely on water and alcohol sponging.

The ice cap has proved very beneficial in delirium and congestive headaches; it also lowers the fever. Cold applications

are undoubtedly coming into favor in the treatment of pneumonia, but, from the nature of this affection, they will never be used to the extent they are in typhoid.

In conclusion, the author calls attention to what are by no means the lesser details in the treatment of pneumonia:

A quiet room, with plenty of fresh air and sunshine, removed from the noise of other children.

Proper food, properly given.

An attendant who will let the child alone when it desires to be quiet, as is so often the case, and one who knows when to turn the child when choked by the secretions, or from long lying needs a change in position.

As to the medicinal treatment, this subject in itself is sufficient for an extended discussion.

Some one has well said, "In the absence of a specific, treat the child, not the disease"; to this the author adds, let us not overdo.

Menzies, J. Acworth: The Vision of School Children. (*British Medical Journal.* 1899. No. 1988.)

The importance of examining the refraction of all children's eyes becomes more apparent when the proportion of cases of defective vision is realized. Mr. Lawson, in 2,014 London children, found only 698, or 34.6 per cent., with normal vision in both eyes. The author's own examination of 398 Rochdale elementary school children gives 177 normal, or 44 per cent. In addition to these were found 120, or an additional 32 per cent., who would have passed Mr. Lawson's test as normal, that is to say, they read $\frac{6}{9}$ with each eye, but it was found on testing with weak convex glasses that they had a small amount (1D or more) of manifest hypermetropia.

Allport found out of 25,696 children in the Minneapolis public schools, 8,166, or 32 per cent. defective, but he does not seem to have tested for low degrees of hypermetropia, and probably the percentage of emmetropic children was much lower than 68. Another consideration which makes it desirable that the vision of each individual should be tested at as early an age as is practicable is that a child, or a grown-up person for that matter, may be quite content with defective vision through ignorance that the vision of others is any better than his own. This is the case especially in the minor degrees of astigmatism.

The importance of detecting defective vision early in life is then, it seems to the author, sufficiently obvious. The difficulties in the way of doing so are few. The method followed by Mr. Lawson is simple, and easily carried out. If adopted by the managers of schools throughout the country it would mark a distinct advance in the performance of the duties of those who have the care of children.

Early in the present year the author undertook the investigation of the eyesight of children in the Rochdale Parish Church School. He carried out the entire investigation personally, first testing each eye of each child by means of Snellen's types and trial lenses, and then examining with the ophthalmoscope and retinoscope those whose vision was subnormal.

As the result of these observations among 221 children, the author found hypermetropia in 165 or 85 per cent., 66 being boys and 99 girls; astigmatism, in 40 or 9 per cent., 29 being boys and 11 girls; myopia in 16 or 6 per cent, 6 being boys and 7 girls.

Winter, W. Essex: The Treatment of Chorea. (*Treatment.* 1898. No. 17; *The American Journal of the Medical Sciences.* 1899. Vol. cxvii., No. 3.)

The author states that the first matter of importance consists in keeping the child in bed. This is necessitated by the tendency to endocarditis, and its value is emphasized by its beneficial effect in shortening the disease and bringing about a speedy cure in long-standing cases.

The more useful drugs are antipyrine and arsenic—the first in early stages and in acute disease; the latter in later stages and chronic or recurrent cases. A disadvantage in the use of the first remedy is that when prolonged or administered in large doses it may bring out a pink, erythematous eruption, which may lead to the supposition that the child has measles, and sometimes give rise to interruptions in the treatment. The efficiency of treatment by arsenic is often marred by insufficiency of dose. In the majority of instances the dose of Fowler's solution must be increased to ten or fifteen drops in the course of ten days to a fortnight if the symptoms do not decline. Toleration is readily secured, provided that the drug is not given in too large a dose at first or the dose increased too rapidly, the medicine always being given, with sufficient dilution, immediately after food. In some cases arsenic may be pushed too far and produce a serious neuritis, but this is not likely to occur if the patient be kept in bed.

In all cases a liberal diet is required, but stimulants are unnecessary. The principal complications are endocarditis and pericarditis, which in the acute stage are best treated by the salicylates. Rarely the movements are so violent and continuous as to bring about contusions and abrasions of the skin, with exhaustion, and chloral and the bromides become necessary. The dose should be gradually increased until either the symptoms are subdued or physiological effects are produced.

Slay, J. C.: Exercise of Infants. (*Dietetic and Hygienic Gazette.* 1899. Vol. xv., No. 2.)

A proper attention to exercise is not less important during the early period of infancy, than in after life. Upon it depends, in no trifling degree, the health of the little being, as well as

the proper development and freedom from deformity of every part of its body. An infant is, however, from the very state of its organization, unfitted to sustain any very active exercise. Its bones and muscles are as yet incapable of bearing the weight of the body, and of course all the exercise it can enjoy is that which is communicated to it by its nurse or attendant.

The earliest species of exercise to which children are submitted, is that of rocking in a cradle. Without objecting to the motion thus communicated, when it is gentle and not too long continued, or too frequently repeated, we must be permitted to say that under opposite circumstances it is more or less injurious. It is especially so when resorted to immediately after the child is taken from the breast, or for the purpose of composing it to sleep when restless or fretful.

The best exercise for a young infant is obtained by allowing it to amuse itself upon the nurse's lap, and by carrying it frequently about in the arms. When sufficiently old to be attracted by surrounding objects, taking it frequently into the open air, especially in the country, during the milder seasons of the year, has a highly beneficial influence.

In carrying an infant, some important precautions are necessary. The back bone is at this period almost entirely composed of a soft yielding substance, that is incapable of supporting the weight of the head and other parts which rest upon it, in the erect position of the body. To prevent deformity, therefore, a young child should not be held in a sitting posture upon the arm of the nurse; it ought always to be carried in the arms in a half lying position, so that the head, and every part which bears upon the spine, receive a proper support. In delicate infants, a permanent bending of the body to one or other side has frequently been caused by their being carried for too long a time in the nurse's arms without changing the position in which they are held. To obviate this, the child should be carried, by turns, on both arms.

It is very common to toss a young child up and down, in the arms, held at full length from the body. The action thus communicated is of too violent a kind to be borne with impunity in the early periods of infancy, to say nothing of the serious accidents which may result from it, even when the utmost care is observed. As soon as a child is able to sit alone, placing it upon a carpet or soft cushion spread upon the floor, and allowing it to amuse itself with its toys, is far preferable to constantly nursing it in the arms, or allowing it to be rocked for hours in a cradle.

It is only towards the end of the ninth month, and frequently even later, that it is proper to teach a child the use of its feet. As a general rule, no particular attempt should be made to induce it to walk at an early period; the bones not having acquired a sufficient degree of solidity to support the body, every effort to place the child upon its feet is calculated

to produce considerable and permanent deformity; and so far from promoting, to retard the growth of the body. In teaching a child to walk, it should be left entirely to its own efforts; all artificial support is injurious; as generally applied, this support has a tendency to produce an unnatural elevation of the shoulders, while the infant, depending upon it almost alone for the support of its body, is accustomed to bend too much forward, or to one side. By this may be laid the foundation of a permanent deformity, or at least of an ungraceful gait, which it is often impossible in after life to correct.

All that need be done to induce a child to walk at the proper period, is to place it upon a carpeted floor, and to present to it at a little distance some attractive object; the desire of obtaining it will overcome the fear of falling, which is experienced in first attempting to walk alone; and in a very short period the tottering and uncertain step which is then exhibited, will give way to a firm, confident, and upright carriage. Even after it has learned to walk, a child should not be urged to use its feet for too long a period at a time. The powerful and novel action into which the several muscles are thrown, produces very quickly fatigue, while it is to be recollected that the bones are still easily bent, when they are called upon to sustain the weight of the body, and the force of the muscles, for any length of time.

SURGERY.

Féleizet: A New Procedure in the Treatment of Foreign Bodies in the Nasal Fossæ of Children. (*Journal de Clin. et de Thérap. Infantiles.* Vol. vi., No. 48.)

Thirty-one cases of foreign body in the nose were seen among children ranging from four weeks to twelve years of age. The procedure, which gave excellent results in every case, consisted in forcing out the obstruction by means of a syringe of warm water applied to the opposite nostril. A syringe of a capacity of from three to five hundred grammes is used, and the injection is begun slowly and carefully in order that the Eustachian tube shall have time to close and the palate to contract. Then the force of the stream is increased, and resistance is encountered and overcome; at the same time the foreign body is either forced out of the nostril, or moved to within easy grasp by the forceps. No accident to the middle ear has ever resulted. If the diagnosis be obscure this manœuvre will readily prove the presence or absence of an obstruction, and that without the pain and danger of instrumental exploration of the nasal fossæ in young children.

American Pediatric Society.

TWELFTH ANNUAL MEETING.

Washington, D.C., May, 1900.

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The next meeting of the Society will be held in Washington, probably in May, in connection with the Congress of American Physicians. It is hoped that the members will decide early upon the subjects of their papers, in order that an early preliminary programme may be issued. It is expected that the publication of the papers read at the last meeting will be completed in December, and the Transactions issued early in the year.

ARCHIVES OF PEDIATRICS.

VOL. XVI.] DECEMBER, 1899. [NO. 12.

Original Communications.

THE IMPORTANCE OF PROLONGED REST IN BED AFTER ACUTE CARDIAC INFLAMMATIONS IN CHILDREN.*

BY L. EMMETT HOLT, M.D.,

Professor of Pediatrics, New York Polyclinic; Attending Physician to the Babies' and to the New York Foundling Hospitals, New York.

The general impression prevails that the prognosis in acute cardiac inflammations of a severe type is much worse in childhood than in later life. Certainly the consequences of such inflammations which are continually brought to the physician's notice, whether in hospital, dispensary or private practice, would seem to justify the opinion.

There are three reasons why cardiac inflammations are likely to be especially serious in young children: (1) the frequency with which both the endo- and pericardium are involved; (2) the great tendency to acute dilatation; (3) the liability of these attacks to be complicated by pneumonia.

The cardiac muscle, like the voluntary muscles, in young children, has by no means the resistance which it attains in later life; as a consequence of this, it happens that under the strain of an acute inflammation, dilatation comes on very readily and progresses more rapidly than in adults. The danger of dilatation is much increased in cases complicated by pericarditis. It is largely owing to rapid dilatation that we see so many cases succumb during the acute attacks, and it is usually in consequence of progressive dilatation that cardiac failure with dropsy and all its attendant features so often follows within a few months after the primary attack.

It is this condition of the heart walls which must be the chief consideration in the treatment of acute attacks, not only during the period of active inflammations, but for a considerable time afterward. I have long been of the opinion that if we

*Read by title before the American Pediatric Society, Deer Park, June 20, 1899.

would minimize the injurious effects of acute endo-pericarditis, we must secure to these patients as nearly absolute rest as is possible; and that, not simply for a period of two or three weeks after acute symptoms, but for as many months.

With adults the amount of work required of the heart may be pretty well regulated after the patient is sitting up or even walking about. With children, however, it becomes a practical impossibility to control or regulate the amount of exertion when once they are allowed out of bed. With them, therefore, if rest is to be secured at all, it can be accomplished only by strict confinement to the bed and in a recumbent position. This must be continued long enough for the heart to regain its tone and for a readjustment of the circulation to take place. In practice, I have not found this as difficult in any case as had been anticipated.

The two cases whose histories are given below, illustrate in a striking way the benefit resulting from this plan of treatment. They are selected as representing types of most serious inflammation affecting both the endo- and the pericardium; both were complicated with pneumonia and both were nearly fatal in the acute stage. The third case illustrates only too well what is so often seen to follow where children after acute heart inflammations are allowed to be up and about as soon as their general symptoms permit. All of these cases were observed in private practice and all were living under circumstances which made possible anything and everything which the patients required.

CASE I.—*Acute rheumatism; endo-pericarditis; two attacks of pneumonia: condition of the heart two and a half years after the primary attack.*

C. D., male, three and a half years old, a private patient living in the best surroundings; under close personal observation since infancy. Never any previous illness of importance. Family history strongly rheumatic; the mother, an older brother and sister had suffered from repeated attacks of acute or subacute articular rheumatism.

The boy was taken on March 9, 1897, with chilly sensations, vomiting and high fever. He was seen on the following day with a temperature of 102.5° F., and seemed much prostrated, but a careful physical examination gave no clue as to the

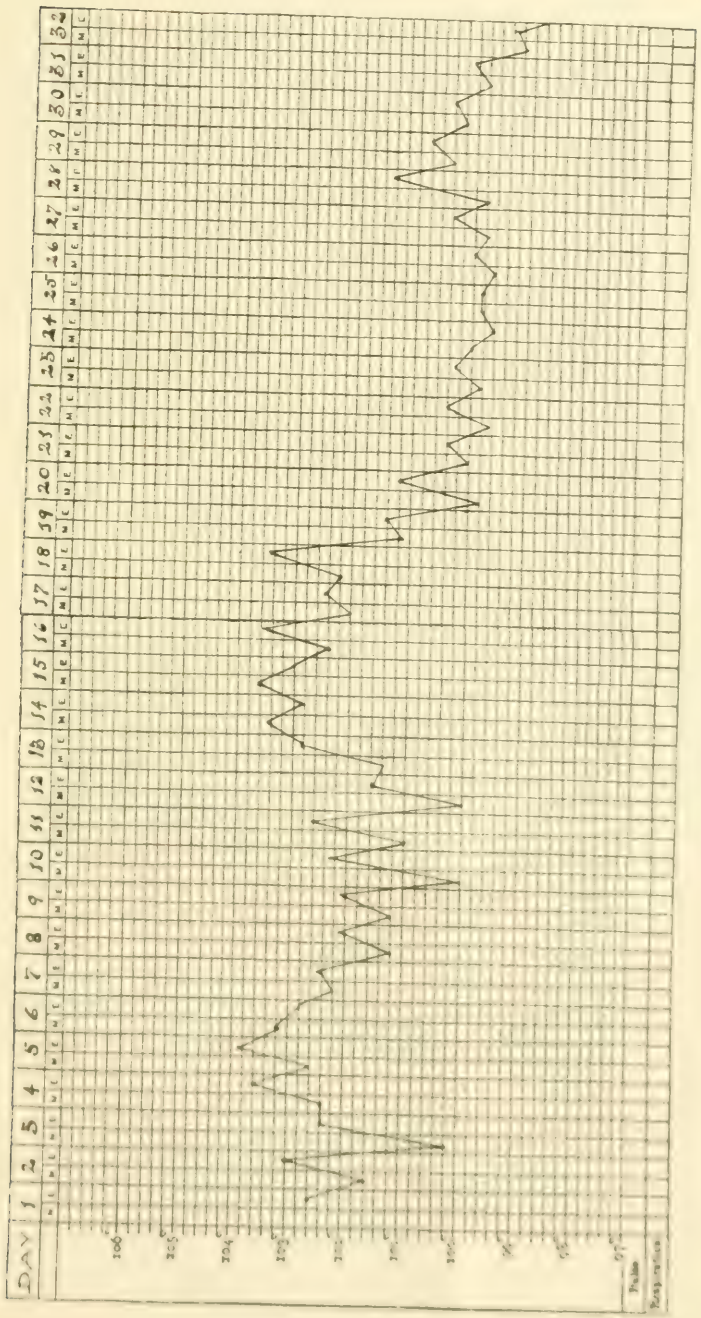


CHART OF TEMPERATURE IN THE CASE OF C. D.

cause of the constitutional symptoms. On the third day, the temperature having continued, an eruption of urticaria appeared upon the hands and thighs, and this on the following morning gave place to quite a remarkable erythema, which occurred in large patches of symmetrical distribution, especially about the knees, ankles, abdomen and back. The larger patches were somewhat larger than the hand, and the smaller ones scarcely an inch in diameter; all were sharply circumscribed, and all of the same dark, purplish color, looking almost hemorrhagic. This eruption faded after two or three days, changing to a coppery hue before it disappeared. Coincidently with the eruption there occurred pain, tenderness and swelling of the large joints of the left lower extremity, and on the next day the joints of the right side were also affected.

On the fifth day of his illness a distinct systolic murmur was heard for the first time at the apex of the heart. The temperature is shown on the accompanying chart.

The early part of the second week of the illness was characterized by a gradual subsidence of the articular symptoms, slowly falling temperature, and improvement of the general condition; but the cardiac murmur persisted and became gradually more and more pronounced. The urine was highly acid, and contained traces of albumin, and there were frequently recurring outbreaks of urticaria. The treatment so far had been salicylate of soda, given in as full doses and as regularly as the stomach would permit, and a sufficient alkaline salt to overcome the high acidity of the urine. As much as gr. vii. of the citrate of potash was required every two hours to produce this effect. The lungs thus far had been normal.

On the thirteenth day a sharp rise in the temperature occurred, with considerable dyspnœa, which was explained two days later by the development of acute pericarditis, and subsequently by pneumonia of the left lung. Loud pericardial friction sounds were heard over the upper half of the cardiac area. The prostration now became marked, and the pulse, which had previously ranged from 110 to 125, rose to 140. The stomach became so irritable that all food and almost all medication had to be interrupted, and the general symptoms were most disquieting.

On the sixteenth day (March 25th) a small area of pneumonia was discovered at the left base behind, which rapidly extended

until nearly the entire lower lobe became consolidated. For the next week the pneumonia became the most important condition, and the child remained in a very critical state. Nothing but a little bovinine and whiskey could be retained in the stomach, and he was kept alive chiefly by the use of oxygen, which was given almost continuously.

The heart's action became very weak and at times irregular: the pulse ranged from 140 to 150, and the whole precordial space throbbed violently under the laboring action of the heart. There was now a double murmur at the apex; steadily increasing dilatation was evident, the apex beat being now one-half inch to the left of the nipple. For three or four days it did not seem possible that the heart could continue to hold out against such odds. But gradually at the end of the third week things took a turn for the better, and slowly there was improvement, first in the general symptoms, and a little later signs of resolution appeared in the lung. Things progressed quite favorably for the next three or four days, and the signs of consolidation had entirely disappeared; but on April 5th, without any assignable cause, the temperature again rose, pulse increased to 154, respiration ran up to 60, and for the second time the left lower lobe became almost completely solidified.

During the next four days his condition was worse than at any previous time during his illness. Food had to be practically discontinued on account of the irritability of the stomach, and only the smallest quantity of stimulants could be retained. Oxygen was given constantly and strychnine and digitalin pushed as far as possible. He had now become greatly wasted; respiration ranged from 60 to 70; there was extreme pallor, great muscular feebleness and almost every day two or three attacks of syncope. Gradually he rallied from this low condition, and by April 11th, for the second time, resolution was well under way in the lung, while the clearing tongue and returning appetite indicated an improvement in the digestive organs. It was really remarkable to see how the heart stood the strain of this second attack of pneumonia. The dilatation increased steadily, and the organ labored hard to keep up the circulation, but the odds were so great that on several occasions it would seem that the heart could not maintain the effort. Once or twice, even after there was marked improvement in the lungs, attacks of syncope came on, in one of

which, I think, he would have died but for prompt and energetic stimulation.

It was not until the end of the fifth week of his acute symptoms that there was really any continuous improvement. The apex impulse was now ¾ inch to the left of the nipple and about the same distance below the mammary line. The pericardial friction sounds had disappeared, but there was a double murmur at the apex, the systolic one being loud enough to be heard over the whole left chest in front and behind. The impulse was heaving, but the pulse most of the time continued regular. From time to time during the next week or two, slight articular manifestations of rheumatism occurred, but they were not severe nor persistent.

After this time the progress toward recovery was rapid. The digitalin was continued until the 10th of May, and after this only strychnine used. Even during this first month a marked change took place in the heart. The apex beat receded until it was nearly in the mammary line, although there was no change in the murmur. No dropsy had been present at any time. The lung had entirely resolved. Up to this time the child had been kept absolutely flat on his back, not being allowed even to raise his head.

On May 12th he was taken out of doors for the first time in a rolling chair, still being kept entirely recumbent. This was continued daily; but it was not until the 1st of July that he was allowed to sit up, and not until August to put his foot to the floor or take a step.

On July 1st he was taken to the country and kept there nearly three months, for the most of the time being in the open air, lying flat in his rolling chair. No return of the rheumatism and no symptoms referable to the heart occurred during this period.

I examined him again carefully on October 1st. He was apparently in as good physical condition as ever in his life. He had grown fat, strong and was no longer anæmic; the pulse was regular and from 104 to 110 a minute. The apex impulse was now one half inch *inside* the mammary line and only one-half inch below the nipple. The systolic murmur was still heard at the apex, but it was not loud, and audible only over the heart and at the angle of the scapula behind. The presystolic murmur had entirely disappeared; no trace of pericardial friction sounds could be heard, and lungs, liver and spleen were normal.

During the succeeding winter he was gradually allowed

more and more liberty in the way of exercise, and was permitted to walk in the street and about house on the level, but not to go up and down stairs without assistance.

June 1, 1899.—It is now over two years since the acute attack. The boy has been kept under close observation and heart carefully examined at short intervals during this period. For more than a year no restraint has been placed upon the child's activity except that of avoiding violent, romping play. He runs about, goes up and down stairs, rides a tricycle and, in fact, does almost everything that any six-year-old boy does, and without the slightest inconvenience of any kind. The apex beat remains fully one-half inch inside the mammary line and in the fifth space. No unnatural impulse in the cardiac region is noticed. The murmur has become much less distinct, but it is still easily recognized. There has been no dropsy and no return of rheumatic symptoms. At no time has the child complained of the slightest discomfort which could be attributed to his heart. The general health has remained good with the exception of a chronic indigestion during the past spring, which continued for over two months, and, although he lost several pounds in weight, became very pale and excessively nervous, his heart stood the strain remarkably well. It was carefully watched and with a good deal of anxiety, but did not seem to be affected in the slightest degree. He is now well-grown and considerably above the average both in height and weight for his age.

November 13, 1899.—I examined him to-day for the first time since the summer. There has been no striking change since June, except that the murmur is much fainter and behind is heard only with difficulty. The apex beat remains in the same situation. He never complains of his heart, though he is of an active, restless temperament and never quiet. He is gaining rapidly in height and is somewhat paler than usual, but otherwise in excellent health, and has had no rheumatic symptoms since his primary attack.

CASE II.—*Pericarditis with effusion; endocarditis; two attacks of pneumonia; malaria: condition of the heart twenty-one months after the acute attack.*

E. P., eight years old; female. Seen in consultation with Dr. W. H. Risk, of Summit, N. J., February 3, 1898.

The family history was strongly rheumatic on the mother's side, and a younger sister of the patient had died two years

before of an acute rheumatic endocarditis and complications. The patient had always been considered a rather delicate child, but she had never suffered from any of the ordinary infectious diseases. The present attack was preceded about a month by an irregular fever which was regarded as malarial and which continued for two weeks. After this she was well enough to go out coasting on January 29th. This exposure, however, was followed by a high fever, which marked the beginning of her illness, and the child from that time had been kept in bed. During the five days preceding my visit the temperature had ranged from 101° to 104°; the only other symptoms were great restlessness, marked prostration and a short, teasing cough.

On examination I found a pale, thin girl with considerable dyspnœa, the respiration accompanied by a short expiratory moan: temperature, 103.6° F.; pulse, 136 and weak; respiration, 50. Her general appearance was that of a child who was very ill. Over the left chest in front there was marked dulness extending outward nearly to the axillary margin; above, to about the second intercostal space; below, to about the fifth space; to the right, a little beyond the median line. This region of dulness was sharply outlined, and over the upper portion of it a very loud pericardial friction sound was heard over a circumscribed area. A loud double murmur was heard at the apex of the heart, and at the angle of the scapula, left side, a single, systolic murmur. The respiratory sounds in front over the area of dulness, were absent; behind bronchial breathing was heard over a small area at the middle of the lung, near the spine. This was also dull on percussion. There were no râles in the chest in front or behind. The right lung was normal; other organs normal.

A diagnosis was made of mitral valvulitis and pericarditis with effusion. The pulmonary signs heard posteriorly in the left lung regarded as due to pressure. The treatment was salicylate of soda in full doses, digitalis and small doses of morphine.

I saw her again five days later. A striking improvement had taken place both in the general condition and in the local symptoms. The pulse now ranged from 90 to 104. The temperature had gradually fallen, and on the day previous to my visit it had been normal both morning and evening. Pericardial friction sounds were still present but not so distinct as at the first examination. There was only a single murmur at the apex

but this was transmitted to the left and heard distinctly behind. The area of dulness anteriorly was much smaller and respiratory murmur in the region more distinct. A few râles were heard in front toward the margin of the axilla, and behind where formerly there had been pure bronchial breathing the lung was filled with moist râles, indicating that probably the signs previously present had been due to a pneumonic consolidation and not to pressure. A few coarse râles upon the right side.

The general improvement in all the symptoms continued for nearly a week after which time she was regarded as convalescent; but on February 13th, without any apparent cause the temperature again rose to 102.5° and with this there was cough, dyspnœa and sharp thoracic pain. I saw her for the third time the following morning and made out a small area of pneumonia at the extreme base of the left lung behind. Examination of the heart showed that a good deal of dilatation had already taken place. The apex beat was one inch to the left of the mammary line and three-quarters of an inch below the level of the nipple. The area of cardiac dulness, however, did not extend beyond the border of the heart. No pericardial friction sounds were heard and fairly good respiratory murmur was now present at the upper part of the left lung in front, where in her first acute attack there were no breathing sounds. There was no evidence that any increase in the heart inflammation had occurred, but the rise of temperature and other symptoms seemed entirely explained by pneumonia. The child had become greatly wasted, very irritable and extremely anæmic.

From this second attack she rallied quite rapidly; the temperature gradually fell but did not quite reach normal. The pneumonia resolved in a few days.

On February 19th, a third exacerbation in the temperature occurred without any evident explanation. I saw her again on the 21st and was surprised to find improvement both in her general condition and in the heart in spite of the persistence of the fever which ranged from normal to 104.5°. The lung had cleared with the exception of a few coarse râles; the apex beat was now an inch to the left of the nipple, and one and one-fourth inches below. Pulse, 110 to 120.

I did not see her again until March 2d, but the irregular high temperature had continued. It did not seem possible that this could be due to the cardiac lesion, as the physical signs in-

dicated steady improvement here. The spleen could now, for the first time, be made out by palpation and an examination of the blood showed many malarial organisms. Quinine was now begun in full doses; improvement soon followed and the temperature gradually fell to normal. From this time convalescence was uninterrupted.

I did not have another opportunity to see the patient until eight months later, when she was brought to my office, January 15, 1899. I had, however, been kept informed by Dr. Risk regarding her condition. The same general plan had been followed as in the previous case. She was kept in bed for two months after all febrile symptoms had disappeared. This did not seem to affect her general health unfavorably; not only did her heart improve, but she gained steadily in weight, so that when she got up she weighed six pounds more than before she was taken ill. During June she was allowed to sit up part of the day and take short drives; and during July, for the first time, she was allowed to walk. The exercise was carefully and gradually increased during the summer, and by the late autumn she was able to go up and down stairs without the slightest discomfort, and seemed to be in every way normal.

The summer was spent in Vermont at the elevation of 1000 feet without inconvenience, and she improved steadily throughout the season. At no time during the summer was there any return of the rheumatism or any symptoms complained of referable to the heart. At her visit to my office she came skipping into the room in the highest of spirits, with rosy cheeks, and in every way was in excellent physical condition, hardly recognizable as the invalid of the previous winter. The pulse was 100, full and regular. The apex beat in the mammary line, and ½ inch below the level of the nipple. A soft systolic murmur was heard at the apex, but it was faint, not loud enough to be heard behind. No increase in cardiac dulness; no pericardial friction sounds. Lungs normal.

She did not suffer the slightest inconvenience on account of her heart, and it was difficult for one seeing her at this time to believe that she had had so serious a lesion as the one observed only a year before.

November 13, 1899.—She came in for examination at my request. With the exception of a slight diarrhœa last summer she has not been ill since the last note. She leads quite an

active life, rides her pony, runs about and plays pretty much like other children. No return of rheumatism, and no cardiac symptoms since the last examination. The position of the apex beat is unchanged. It is only by the most careful auscultation that any murmur can now be detected. It is very faint and is heard only in the neighborhood of the apex, not at all behind. The pulse is full, strong and regular. The child's development is in every way most satisfactory. Her general health is excellent; she has in fact been better and stronger since than before her serious illness.

I have given the histories of the cases considerably in detail in order that the type of the disease might be appreciated. The strain upon the heart during the attack of pneumonia in the little boy of three years (Case I) was so great that I did not expect him to recover. The second patient, though at no time so desperately ill, was for a week in a very critical condition, and her cardiac lesion seemed to be quite as serious as that of the little boy.

Had either of these patients been allowed to get up soon after the acute attack I feel very sure that the outcome would have been very different. As an illustration of such a practice I will give the history of another patient whom I saw last year.

CASE III.—*Endocarditis complicating pneumonia; death seven months after the initial attack from progressive cardiac failure.*

G. O., female, eleven and one-half years old; first came under my observation December 24, 1898. No rheumatism in the family; the patient was the robust member of the family and previous to July of the same year had never been seriously ill. At that time she had an acute lobar pneumonia of the left lung and was seriously ill for two weeks. The pneumonia was chiefly in front; involvement of the heart was recognized during the acute attack. She was, however, kept in bed only two weeks. In a few days she was allowed out to drive; and shortly after she was taken to the Adirondacks where she spent the balance of the summer. She was allowed to walk about the place, but not to engage in active exercise, and spent most of her time in a boat.

Dr. S. K. Bremner, who examined her early in August, soon after she came to the Adirondacks, reported the condition to me at that time as follows: the apex beat was over an inch to the

left of the nipple and a very loud mitral regurgitant murmur was present.

Her general condition during the summer continued apparently good. But in September she had a short malarial fever; and in November a mild attack of grippe. During both of these she was a good deal prostrated, making a tardy recovery, and suffered from considerable cardiac embarrassment. Except when acutely ill, she had been allowed to be up and about the house, and drove out nearly every day, even up to a few days before my first visit. She also walked somewhat upon the level, but seldom up and down stairs. Early in December a slight dropsy or the feet and ankles was first noticed.

At my first examination there was noted a heaving cardiac impulse; the apex was 1¼ inches to the left of the mammary line and two inches below the nipple. The heart's action was labored and the sounds somewhat confused, but there was a loud systolic murmur at the apex, which could be heard all over the chest in front and over the left chest behind. Near the apex there was heard over a small area a presystolic murmur. The pulse was 120 and somewhat irregular; the face considerably, and the feet slightly œdematous; lungs normal; spleen and liver not enlarged; no fluid in the peritoneal cavity.

For the first ten days under absolute rest and the free administration of digitalis some improvement occurred and the dropsy disappeared; but after a short interval in spite of everything that was done the case went steadily downward. The dropsy in the face and lower extremities returned early in February; the liver and spleen became very greatly enlarged, and she finally died with general anasarca, from cardiac exhaustion and pulmonary œdema on February 22d, two months after I first saw her and a little more than seven months from her first cardiac symptoms. No autopsy.

This girl belonged to a very healthy family, was of strong constitution and lived in the very best surroundings. She was a highly nervous, strong-willed child and was very difficult to control.

These cases teach their own lesson, and comment seems almost unnecessary. I firmly believe that in few things are physicians more blameworthy than in allowing children to get up as soon as acute symptoms have subsided, after they have suffered either from acute cardiac inflammations or from general

infectious diseases (especially diphtheria, scarlet fever or typhoid), of severe type and in which the heart muscle has been affected. The possibilities of harm which may result from this practice are certainly not appreciated. Nor, on the other hand, are the possibilities of improvement or the extent of recovery appreciated, where the plan of treatment above outlined has been followed.

14 WEST FIFTY-FIFTH STREET.

The Power of Absorption in Childhood.—W. Jakubowitsch (*Medizinskoje Obosrenje*) reports the results of a series of experiments made with the view of determining the conditions which influence the process of absorption in children. He arrives at the following conclusions: 1. If food, either in a solid or in a liquid form, be introduced into the stomach immediately after the latter had been carefully washed out, the result is that absorption from the mucous surface of that organ takes place, contrary to general expectation, far less vigorously than before the stomach had been subjected to this treatment. 2. During the existence of a high temperature, either of a continued or intermittent character, the absorbent power of the stomach and rectum is considerably retarded. 3. The age of the child, as such, does not in any way, either at a normal or at an elevated temperature, influence the process by which absorption from the mucous membrane ensures. There is, however, at least one exception to this statement. Clinically it had often been proved that during the period of suckling, absorption and especially from the rectum, varying, of course, with each individual child, is on the whole much slower than at a somewhat more advanced age, say, after one year, and a half; and it has more than once been ascertained, that at the age of from two to five years no mucous membrane of the body is so susceptible to quick absorption as that of the rectum. 4. It is noteworthy that with the approach of death absorption from the rectum is absolutely *nil*, a fact which might aid in forming the prognosis of a given case. 5. The author has convinced himself that solutions of iodide of potassium applied to the skin are not absorbed, provided, of course, that the latter is in a normal uninjured condition.—*British Medical Journal.*

A CASE OF HEART LESIONS.*

BY A. C. COTTON, M.D.,

Professor of Diseases of Children, Rush Medical College; Accoucheur and Attending Physician, Diseases of Children, to Presbyterian Hospital; Member of Staff of Central Free Dispensary; Member of Staff of Cook County Hospital; Lecturer to the Illinois Training School for Nurses; President of the Chicago Pediatric Society.

Edgar Lapointe, Canadian. Aged eleven years, nine months. First brought to the clinic August 2, 1898.

FAMILY HISTORY.—Parents both living. Father has had good health. Mother has had rheumatism. She has had seventeen pregnancies, three of these resulting in premature birth. Of the fourteen born alive, six are now living and, with exception of patient, are now in good health. Causes of death of the others—meningitis, scarlet fever and diphtheria.

PERSONAL HISTORY.—The patient was a strong, healthy baby until four months of age, at which time he had an attack of pneumonia. The mother positively asserts that he never showed any signs of blueness during these first months of existence.

The pneumonia was followed by diphtheria, mumps, measles, bronchitis, pertussis, varicella, typhoid and scarlet fevers. He was ill continuously until three and one-half years old; did not walk until four years of age. Since then he is reported to have grown well and strong and was considered to be fully as healthy as a child could be. Repeated questioning failed to elicit any information of evidences of cyanosis or œdema. The only exception to this perfect health was the occurrence, three years ago, of a severe and prolonged attack of epistaxis that necessitated plugging of nostrils before controlled. Since then slight causes have been sufficient to produce recurrences of the hemorrhage.

PRESENT ILLNESS.—Began gradually the latter part of June with dyspnœa on exertion, palpitation, loss of strength and desire to play. No history of tonsillitis, pain in joints, nor any suppurating focus can be obtained.

STATUS PRÆSENS.—Average build for a child of eleven years. Emaciation. Pallor of skin and mucous membranes. *No*

* Read before the American Pediatric Society, Deer Park, June 29, 1899.

cyanosis. Skin dry and scaling. Petechiæ on legs. Finger tips somewhat clubbed. Œdema of face and feet.

HEAD.—Negative. Pupils equal and react to light and accommodation. Pupils show no eccentric arrangement. No anomalous development of ears. Tongue coated.

NECK.—Slight enlargement of thyroid. Venous pulsation. Carotids poorly filled and of diminished tension.

CHEST.—Inspection—Flaring of rib arch. No noticeable restriction or change of respiratory movement of either side.

Percussion—Right, anteriorly—Apex diminished resonance. Below apex normal resonance to fifth rib. Absolute dulness begins on sixth rib. Lower border of lung descends in inspiration.

Left, anteriorly—Resonance to the second interspace. Absolute dulness begins on third rib. Lower border movable with inspiration.

Posteriorly—Both lungs resonant. Both lower borders movable with inspiration. Lower border at tenth dorsal vertebra.

Auscultation—Vesicular breathing over both lungs.

HEART.—Inspection—Apex beat in fourth interspace, one finger's breadth outside mammillary line. Pulsation of lower portion of sternum and epigastrium.

Palpation—Apex beat in fourth space and a finger's breadth outside nipple. Marked systolic thrill, also felt over lower part of sternum. It increases in intensity toward the base and reaches its greatest intensity in the second interspace to the left of the sternum.

Percussion—Upper border—absolute dulness at third rib. Right border—at level of fourth rib, two fingers' breadth to right of right sternal border. At level of fifth rib, two and one-half fingers' breadth to right of right sternal border. Lower portion of sternum very dull. Left border corresponds to apex.

Auscultation—Harsh systolic murmur heard all over the chest but loudest in second left interspace. At this point the second sound is not distinguishable.

ABDOMEN.—Inspection—Bulging in epigastric region.

Palpation—Lower portion negative. Upper portion—Liver palpable fully three fingers' breadth below costal arch. Surface smooth. Spleen palpable and firm. No friction rubs to be felt.

Percussion—Confirms palpation. Pulse 120, temperature 103° F., respiration 30.

In clinic the diagnosis of endocarditis was made at the first visit to the clinic and, though there was no history of pain in joints, yet as rheumatism in children may effect the endo- and pericardium without any other manifestations, he was put on salicylic acid and cathartics, with directions to keep in bed, and for a simple diet.

During the next two weeks he was seen several times. Some rise of temperature was always present. August 11th, we first noticed a cough of a dry, harsh character.

Wishing better care for the child and closer observation of the symptoms he was admitted to the Presbyterian Hospital August 15th. He was homesick and ran away the evening of August 16th. The following day œdema of ankles was greater, cough more troublesome and heart's action weaker.

August 19th.—Temperature 104½° ; pulse 110 ; respiration 38. No chills nor sweating. Fine râles over both lungs.

August 22d.—He was seen in consultation with Dr. Edwards, whose diagnosis was infective endocarditis.

August 23d.—Temperature 104⅜°. Friction sounds on right side both anteriorly and posteriorly. Has sharp pain in right side. Cough more frequent.

From this time on to the end the case progressed with occasional apparent improvement to be followed by exacerbations. During these attacks the cough became frequent and fine and medium sized râles were heard over both lungs. Sputum was always scanty, never streaked with blood. Examinations of sputum for tubercle bacilli were made during September and October, with negative results.

Examination of blood on September 7th. Hemoglobin 40 per cent. Red cells 2,640,000. White cells 12,330.

Examinations of urine made at intervals of every ten days showed a low specific gravity but otherwise was negative until October 1st, when there appeared a trace of albumin. Each specimen tested after this showed an increasing amount.

There was little change in the heart findings. The venous pulsation became more marked. The last two weeks there was noted pulsation of lobes of ears. This was synchronous with the carotid beat, but light pressure below the lobe of ear caused its throbbing to cease, to appear again on removing pressure—in other words there was a positive venous pulsation.

About the same time the apex beat became more diffuse and its impulse fainter.

The first week in October he complained of toothache. October 5th the second temporary and first permanent molars were extracted. Both had pus sacs at roots.

October 11th.—Toothache continues. Gums inflamed.

October 16th.—Cavity left after extracting teeth has not filled in. Necrosis of gums.

October 19th.—Sloughing of soft tissues reaches nearly to median line and backward to soft palate. Left side of face greatly swollen. Eye closed. Waxy appearance of skin. Odor gangrenous. Appetite better than for past two weeks.

October 21st.—Sloughing has extended across median line. Buccal surface of left cheek reddened. Profuse discharge from left nostril, considerable from left ear. Œdema has extended around neck. Appetite continues good and deglutition is not painful or difficult. Several masses of dead tissue from mouth were dissected away each day.

October 22d.—Left eye discharging pus.

October 23d.—Swallowing slightly difficult. Discharge from left nostril, eye and ear.

October 24th.—Died rather suddenly at 2.30 P.M.

CLINICAL DIAGNOSIS.—Infective endocarditis.

Pulmonary stenosis.

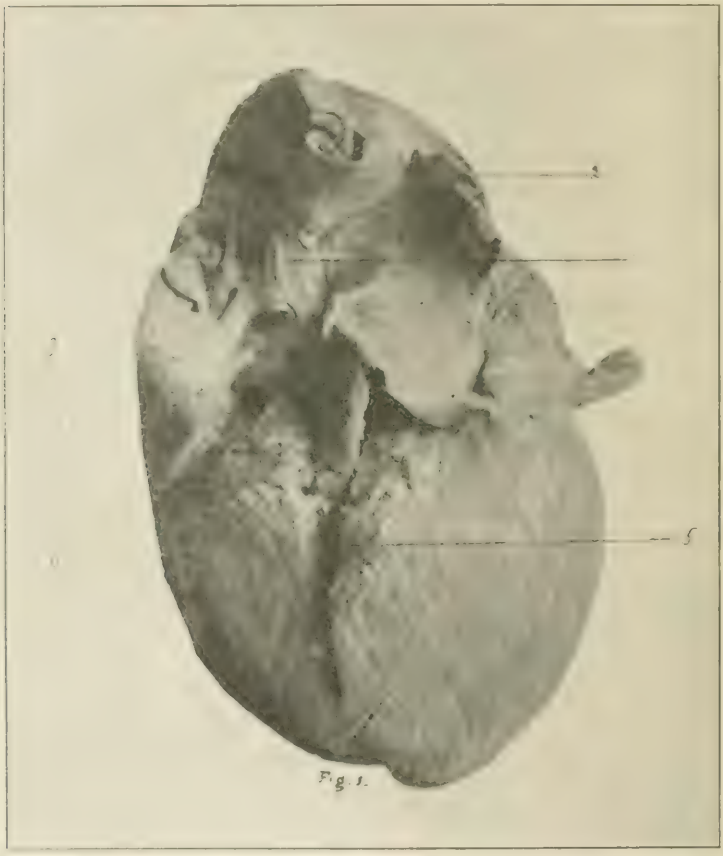
Stomatitis gangrenosa.

NECROPSY BY E. R. LE COUNT,

Assistant Professor of Histology and Pathology, Rush Medical College.

The body is very pale, with a greenish discoloration of the lower part of the abdomen. A puncture (*post-mortem*) wound is present one inch to the left of the navel. The palms of the hands are œdematous. The lids of the left eye are matted together by a sticky secretion, and there is a marked exophthalmos of this eye. The subcutaneous fat exposed by the median incision is scanty and œdematous. The diaphragm extends upward on the right side to the fifth rib, and on the left side to the fifth interspace. The bladder is distended with clear urine. The peritoneal cavity contains a considerable quantity (from two to three pints) of a clear fluid. Adhesions which are easily broken, occur about the spleen. The pleural cavities are each about one-half filled with a clear fluid. The gall bladder is

distended with thick, dark bile; its mucous membrane is œdematous, and its cavity is uninterrupted. The sigmoid flexure reaches in a distended coil upward and to the right, to a point opposite the navel. The ureter on the right side is dilated to the size of a



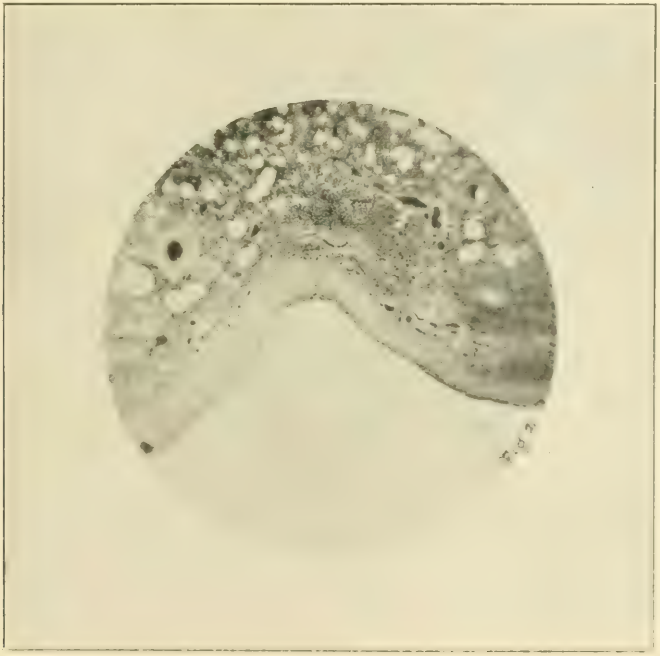
HEART AS SEEN FROM ABOVE AND THE RIGHT.

1. 1. CUSPS OF PULMONARY VALVE.—2. PULMONARY ARTERY CUT OPEN AND LYING OVER THE AORTA.—3. 3. CUT EDGES OF THE ANEURYSM IN THE WALL OF THE RIGHT VENTRICLE—THE CAVITY OF THE ANEURYSM LIES BETWEEN THEM.—4. STENOSIS OF THE PULMONARY CONUS.—5. INCISION INTO LEFT VENTRICLE.—6. INCISION INTO RIGHT VENTRICLE.

lead pencil, the walls being thin. The back of the tongue is of a grayish-black color. The tonsils are both atrophic and pigmented, being of a slaty-blue color. The musculature of the tongue is dry and pale. The œsophageal mucosa is ivory white

and smooth. The larynx and trachea possess linings covered with a frothy, greenish mucus. The pericardial cavity contains a quantity of clear, opalescent fluid.

THE HEART measures 10 cm. across the base, 9.5 cm. from the base to the apex, and 5.5 cm. in thickness. It weighs 170 gm. Both the mitral and tricuspid valves admit three finger tips. The aortic and pulmonary valves appear competent to the water test. The mitral cusps exhibit no changes. The posterior cusp of the tricuspid valve is thickened along its free margin.



FIBROUS WALL OF A HEALED SEPTIC INFARCT (METASTATIC ABSCESS). +15.

There are no changes about the aortic valves, except that all three cusps show slight fenestration of the margins. Below the aortic valves in front and above the interventricular septum is a pouch which easily contains the bulbous tip of a finger, and is from twelve to fourteen millimetres in diameter. At the bottom of this pouch is a small hole, two millimetres in diameter, through which a probe can be passed into the right ventricle, where it emerges just below the stenosis in the conus, and just

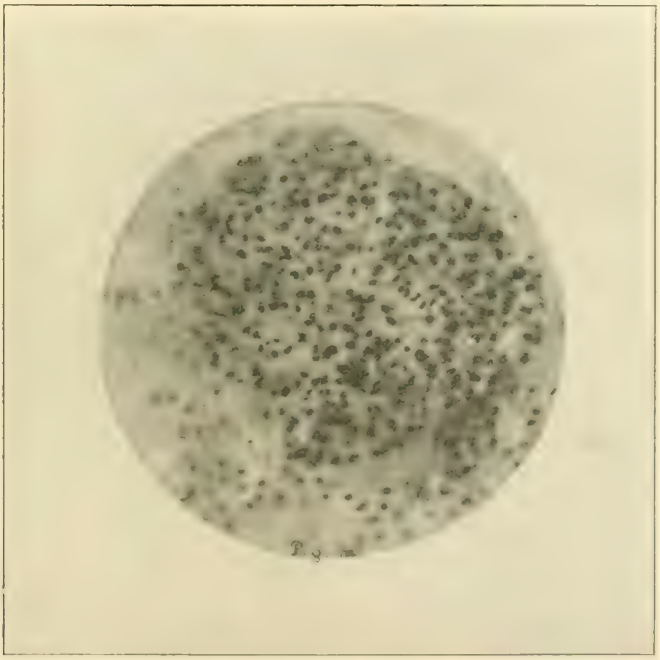
below the tricuspid valve. This pouch lies in the "unprotected space." The endocardium on the septum below the pouch, (left ventricle) is thickened and of a whitish color. The left ventricle measures 6.5 cm. long; the wall averages 12 mm. The right ventricle shows near its upper left-hand corner, just below the pulmonary valve, a stenosis of the conus. This opening measures 9 mm. in diameter and approximately 2.5 cm. in circumference. This stenosis is 14 mm. below the pulmonary cusps, of which there are but *two*. Below these cusps and



A SINGLE GLOMERULUS SHOWING A GREAT EXCESS OF NUCLEI. (+250.)

between the pulmonary valves and the point of stenosis in the conus is a cavity extending outward in the heart wall. It extends for a distance of 3.5 to 3.8 cm. forward and to the right in the wall of the right ventricle. With the heart unopened it lies in front of the large vessels. Its walls are thin, covered with a whitish, smooth lining. It is crossed by numerous bands of myocardium which resemble the trabeculæ of the ventricular walls. Among these trabeculæ is a quantity of whitish

and yellowish-gray, clotted blood, somewhat adherent in places, and which in some spots leaves a rough surface when it is removed. The wall of this aneurysmal sac at its thinnest point measures 2 mm. The right ventricle measures 6.5 cm. in length and its wall averages from 12 to 14 mm. in thickness. The foramen ovale is closed. The right auricle is dilated and its walls appear thickened. No sign of a ductus botalli were found, nor any changes in the pericardium nor in the coronary vessels.



A SINGLE GLOMERULUS SHOWING A NECROTIC AREA IN THE LOWER RIGHT CORNER. NECOTIC. (+250.)

LEFT LUNG.—Over the lower lobe is a delicate, fibrinous exudate. At the margin of this lobe, below and laterally is a small area of consolidation, which on section shows a cavity filled with grayish-yellow pus. There are also areas of consolidation, minute and buckshot sized, which contain a dry, yellowish, granular material. There are no changes in the surrounding lung tissue, aside from a wall formation. At the upper part of this lobe there is an area of consolidation somewhat wedge shaped, and reddish on section, which shows at the bottom a

thrombosed vessel. The thrombus is occluding and grayish-yellow in color, and is adherent. In the apex of this lung is an old cavity, the size of a walnut, containing gas or air, which collapses on pressure. It is provided with a definite, fibrous wall, a somewhat trabeculated cavity ; there are no changes in the surrounding lung tissue. Also in the upper lobe are some nodules, similar to those in the lower lobe. The right lung possesses a fibrinous exudate external similar to that on the left lung. In the lower border of the right lower lobe is an old cavity with smooth walls. It is empty. There are no changes in the surrounding lung tissue. The middle lobe shows no changes. The upper lobe, in the apex, possesses a cavity, similar to but smaller than that in the left upper lobe. Deeper in the right upper lobe is a similar, but larger cavity. Both lungs float, both are pinkish in color and crepitation is fair. The glands at the roots of the lungs are enlarged, are dark reddish in color; they show no caseous areas, and only slight blackening by coal pigment.

THE LIVER measures 21.5, 15., 11.5, cm., and weighs 950 g. On section it presents a mottled appearance, with rather gross yellowish areas. It is soft and the lobular markings are distinct.

THE SPLEEN.—This is 15.8 cm. long and 8 cm. wide and 4.5 cm. thick. There are fibrous tags on the capsule, externally. On section it is soft. The Malpighian bodies, which are very numerous, are large and whitish in appearance. Weight 290 gm.

THE KIDNEYS are equal in size, weighing together 315 g. and measuring 11.5, 6.5, 4.5 cm. The left kidney is practically bloodless. The fat of the pelvis is œdematous. The capsules are easily removed. The cortex of the left kidney is pale and of a glossy appearance. The cortical markings are quite distinct. The glomeruli project as pale bodies.

THE BLADDER has a pale mucosa ; a fibrous nodule, 12 mm. long occurs at its apex. It is firm and whitish on section, and contains no cavity. No changes are presented about the prostate gland, nor the seminal vesicles.

The intestines, pancreas and other viscera showed no gross changes. Examination of the brain and left eye was not allowed.

ANATOMIC DIAGNOSIS.—Stenosis of the pulmonary conus.
Malformation of the pulmonary valve (2 cusps).
Aneurysm of the right ventricular wall.
Acute mural endocarditis.
Defective (perforate) ventricular septum.
Fibrinous pleuritis.
Old healed and recent metastatic abscesses of both lungs.
Cloudy swelling of the liver and kidneys.
Chronic splenitis, acute perisplenitis, general anæmia.
Anasarca, hydrothorax, hydropericardium, and ascites.
Embalming (undertaker's) puncture.
Panophthalmitis of the left eye.

MICROSCOPIC EXAMINATION.

The interesting changes centre in the lungs and kidneys. One of the small areas of consolidation from the left lung has undergone a marked necrosis in which all signs of alveolation have disappeared. This necrosis is irregular in outline and appears to have taken place in patches which have fused. In this necrotic tissue are medium sized blood-vessels which are completely filled with necrotic thrombi. The lung tissue around is consolidated by fibrillated cells and leucocytes which fill the alveoli. The firm fibrous walls of these cavities were examined and showed essentially the same features. The wall is made up of fibrous tissue which stains mainly with eosin, the cells in the wall are fibrillated and possess undulating ends; there are also some cells with oval nuclei and some granules of blood pigment. The alveoli in the immediate vicinity are quite crowded with small oval or round cells and red blood corpuscles. The spleen shows a superficial necrosis which includes the capsule and a narrow zone just beneath it. In this necrotic tissue is considerable fibrin. The spleen corpuscles contain a large number of red blood cells and in a few cells of the corpuscles proper the nuclear staining is deficient. In the kidney very striking changes are present in the glomeruli; the nuclei present far exceed the normal, most of them are small and oval and it is difficult to outline the cell bodies; almost without exception the glomeruli contain numerous cells which are very much fibrillated and drawn out into narrow necked projections. In addition to these features many glomeruli contain areas which are very reddish from

the eosin staining and in such areas the nuclei are few and extremely distorted, such eosin staining areas occupy but a small portion of the glomerulus and are usually at the periphery; they are crescent shaped and sometimes so closely fused to Bowman's capsule that it is difficult to say whether they are due to changes which have taken place in a mass of cells which accumulated between the glomerulus and its capsule, or to changes in a portion of the glomerulus itself. Weigert's fibrin stain does not reveal any fibrin in these areas nor can bacteria be found by Gram's staining or other methods. Sections of the thyroid, adrenals, intestines, pancreas and heart muscle show no important changes. The liver contains "lymphoid nodules," the nuclei of the liver cells do not react uniformly to nuclear dyes, some staining much more darkly than others. A great variety of leucocytes (?) are present in the capillaries—for the main part these are mono-nuclear and exhibit changes of nuclear death.

BACTEROLOGIC EXAMINATION.—The streptococcus pyogenes was recovered from the lungs and the vegetations and adherent clots in and about the aneurysm of the heart wall. The colon bacillus and two micrococci, which could not be identified, were also obtained from the lungs.

677 JACKSON BOULEVARD.

DISCUSSION.

DR. PACKARD.—I would like to ask about the second pulmonary sound in this case. Great stress has been laid upon the accentuation of the second sound in such cases. Why it should be it is difficult to see, but it has been considered of marked diagnostic value.

THE PRESIDENT.—The point of the second sound interests me very much, for I had a pair of congenital malformations of this kind, and one of them had a very pronounced second sound perfectly characteristic, while the other had none. There was nothing but a peculiar dulness that threw us off our guard.

DR. COTTON.—This case was particularly interesting to me because I failed to make the diagnosis *ante-mortem*. It was examined by several excellent diagnosticians and Dr. Butler was the only one who made the diagnosis of pulmonary stenosis and stuck to it.

PELIOSIS RHEUMATICA IN A LYMPHATIC CHILD.

BY J. PARK WEST, M.D.,
Bellaire, Ohio.

The following is an instance of that rather unusual disease described by Schönlein in 1829 as *peliosis rheumatica*. As will be seen by the description, many of the skin lesions in this case resembled those of erythema nodosum. But the presence of other lesions bearing no resemblance, the lack of symmetry, the absence of pain and tenderness on pressure, the presence of rheumatic joints, the rapidity of the changes with the rapid course, and the probability of sore throat removes this from the category of the erythemas. The lesions never became soft, but, until the last vestige disappeared, had a denser feeling than the surrounding skin. The association of this with the *status lymphaticus* was no doubt a coincidence, although swelling of the lymphatic tissue, particularly of the spleen, has been noticed in cases of Schönlein's disease. The enlargement of the nodes and other lymph tissue remained the same for considerable time after the disappearance of the purpuric affection, and part of the swollen nodes were known by the parents to have been present for quite a while. The three or four largest nodes, at the angles of the jaw, diminished fully one-half in a week, indicating their enlargement had been due to an acute process in the throat.

The patient, a female, is two years and three months old. At birth she was very small, having been born prematurely at the eighth month of utero-gestation, eleven months after the birth of the only other child in the family—a boy, who died from meningitis when eleven weeks old. The mother, twenty years old at the time of this second birth, was in very poor health for several weeks before and after her confinement. The baby was nursed and bottle-fed and got on poorly, always having diarrhœa, until she was twenty-one months old, when she was weaned. Since weaning she has been fed at the family table and allowed to drink considerable coffee; nevertheless, she has had better health, her bowels being at times regular, sometimes costive and again loose. Her father was twenty-six at her birth, and both parents are now healthy; no history of any hereditary trouble can be obtained from either side.

The child has a light, clear skin, is small, very bright and quick. Her weight is 21 pounds, her height 30 inches, the circumference of her head 18, chest 18, and abdomen 19½ inches. The papillæ on the back of her tongue are large, the tonsils are large, and the throat shows no acute process. The lymph nodes in both inguinal regions are ¼ to ⅜ inch large, those in the axillæ about half that size, three or four quite large nodes under the angle of each jaw, and quite a large number in the neck, before and behind the sterno-mastoid, about one-third the size of those in the groins. Those in each chain are of a nearly uniform size, separate, hard, and movable. The liver can be felt a finger's breadth below the ribs and the spleen a little lower. The parents say the lumps in the groins have always been there, the others they did not know of.

Six weeks before being seen by me she complained most of one day of her feet hurting her, and when her shoes were taken off in the evening both feet and ankles were red and swollen. The next day they were faintly purple and less swollen, and in two days more were natural except for a bruised appearance of the heels. She was brought to me on Monday, August 28th, because of a return of this and a similar condition on other parts of her body. For a week she had had fever at irregular intervals, was very restless at night and very fretful. The right wrist and left elbow had been swollen and tender, and much complaint made of the elbow a day or two later. The right knee had seemed to hurt her when walking, but was swollen very little. These joints had not been red, but later there had been slight redness over the back of one shoulder, with but little tenderness and no swelling.

At the first visit she was not very ill, but on the previous Thursday the feet had presented the same appearance and underwent the same changes as six weeks before. On the next day most of the left chest, a space on the left back the size of an adult hand, and both lids of the left eye were red, swollen, and hot. After this red, swollen areas of various sizes appeared, usually in the forenoons, on different parts of the body and extremities. This account was obtained from the parents. When seen by me on the fourth day of the eruption there were many spots of different size, shape, and color, one having appeared shortly before and two (the last two) came later in the morning on the abdomen. The right ear had suddenly begun to swell

two hours before, and now the whole auricle was swollen to three times its natural size and stood out straight from the head. It was quite hot to the touch and a bright pink in color that extended one-half inch in all directions from the ear. By evening the swelling had diminished two-thirds, the color was fainter and slightly bluish, and by the next evening all traces had disappeared except the skin on the back of the ear was blue and dense. Over the body and extremities were fourteen red and swollen oblong areas, usually one-third longer than broad, varying in size from ½ x 1 inch to 1½ x 2½ inches, and three very much larger areas. A few were but slightly elevated, while others were abruptly elevated, some one-sixteenth and some one-eighth inch. The latter were bright red and had a brawny, hot feeling, while the former were a darker red with a bluish tinge and a feeling not so dense nor warmer than the surrounding skin. All were sharply circumscribed as to color and swelling, and no two, even when quite close together, became merged into one. The largest (and now the faintest) areas were over the abdomen, nates, and right thigh. With the umbilicus as a centre, there extended irregularly in every direction for two-and-a-half inches a discoloration that was a very light red, with here and there small patches of about a half inch, showing an almost normal color, and at other places small, intensely blue dots one-sixteenth inch in diameter. These dots were thought at first to be minute hemorrhages, but were evidently not, as they disappeared rapidly, left no deeper stain than the surrounding lighter discoloration, and pressure caused no change. Over all there was a slight swelling, making just a perceptible elevation of the skin. The same condition, with the addition of finger-nail marks, existed over the nates. Over the outer side and front of the right thigh was a space 3 x 4 inches, level with the normal skin, that resembled a bruise; not all this was uniformly discolored, as over a part of it were irregularly distributed patches of whiter skin. The swelling and discoloration were as sharply marked off in these as in the more elevated. The feet presented nothing abnormal except slight swelling of the left ankle. There was also a little swelling in the right knee. Neither was markedly tender.

By the evening of the first day of my observation the swelling and discoloration had both lessened. No farther eruption appeared within the next twenty-four hours and by the evening

of the second day the swelling was all gone and the bruised appearance was lessening in intensity and size.

The color varied from a bright pink at first to a dark blue later, each spot being distinctly one color or the other, the transition period being very short. Only the reddish color would diminish on pressure to quickly return, the later bluish color not even fading to pressure. Most of the areas were a solid hue, a few showing a distinct punctate appearance at first. As a rule the largest areas had a fainter color throughout their whole course and after a few hours showed within them paler irregular spaces and at other points the deep blue dots already mentioned. Those most elevated were a very deep red and in them the process seemed the most intense and the resemblance later to a severe bruise more marked.

The swollen areas had at the beginning a brawny, hot feeling, later a leathery feeling and even toward the last, when only the slightest discoloration remained, there was a similar but less marked leathery sensation. There was no pitting on pressure at any stage. The distribution of the lesions was as follows, viz.: three on the abdomen, two each on chest, right arm, right thigh and left calf, and one each on the left hip, right ear and right leg.

A complete cycle occupied about five days, the first changes taking place with surprising rapidity. The beginning of a new outbreak was indicated by the child showing a desire to scratch. An inspection would reveal a red swelling the size and color being at or very nearly their maximum, the redness deepening somewhat for a few hours. This condition would remain for twenty-four hours when the swelling would be found diminished, the redness having gradually taken on a distinctly bluish tinge. By the end of another twenty-four hours the swelling would be entirely gone and only a deep blue discoloration, one-fourth to one-third smaller than the original lesion, would remain. This would fade quite rapidly until the last remnant would resemble a skin stained with a diluted tincture of iodine, the stained area apparently slightly depressed. This latter condition was seen to best advantage over the right thigh which presented a bruised appearance when first seen and was the oldest lesion present. It was just visible two days later. The only variation in color was that on the ear and one or two other places had perceptibly changed in about

twelve hours and that on the feet was not so sharply circumscribed. In a few places the bruised appearance remained one or two days longer.

Neither exposure to air nor the application of cold had effect on the color or swelling. The skin otherwise was normal, no *tache cerebrale* could be produced, and no desquamation followed. No mucous membrane was affected and there has been no cardiac disturbance as yet.

A satisfactory cause could not be found. The first attack was confined to the feet and at this time there was a diarrhœa. This second attack began on a Thursday and the bowels were in good condition until the following Sunday, when there was a diarrhœa that checked in twelve hours without medicine. This diarrhœa was the same as many previous attacks and was not accompanied by pain or vomiting. She was not sick during either attack but only somewhat fretful and at times had to be restrained from scratching. The fever, and tender and swollen joints she had had part of the week before had almost disappeared from twenty-four to thirty-six hours before the eruption came. Two grain doses of salicylate of sodium were given for four days.

3608 BELMONT STREET.

Congenital Teeth.—Joukovsky (*Rev. Mens. d. Mal. de l'Enf.*) records the case of a new-born infant who showed at birth two well-developed lower central incisor teeth. The mother was healthy, and gave no family history of congenital teeth. This was her second child, and it is noteworthy that her first infant, who showed no signs of precocious dentition, was by another husband. In weight the infant was above the normal, and the length was 50 cm. The teeth were normal in appearance, save that one was inserted somewhat transversely in the jaw. There was no local alteration in the surrounding gum. On the fourth day the teeth began to trouble the mother when suckling. The examination of the infant's mouth showed ulcerations under the tongue, and swelling and redness of the gum. An abscess began to form, consequently the teeth were extracted. It required a distinct effort to remove them from their sockets; they were typical milk incisors of a white, not a yellow, color.—*British Journal of Dental Science.*

A CASE OF MULTIPLE OSTEOMYELITIS IN AN INFANT.*

BY T. M. ROTCH, M.D.,
Professor of Diseases of Children, Harvard University,
Boston.

This case is presented as one of pathological rather than of clinical interest. A female infant, one month old, was admitted to the Infants' Hospital, November 16, 1898. The parents, who were Italians, were seemingly healthy and had one other child, a girl, who was also reported to be healthy. One week previous to entrance, what was described as a "red rash" appeared on the abdomen and spread down the left leg. It lasted about four days. Two nights previous to entering the hospital the infant had cried seemingly from pain on movement of the legs. There had been some discharge of pus from the umbilicus, which had never healed. The infant appeared to be well nourished and of good color, with no abnormal appearances, excepting that the umbilicus had not healed, and also that the lower third of the left thigh was swollen so as to be twice as large as the right thigh, and that the skin in this region was red and shiny. The left leg was held stiffly and somewhat flexed, the knee being bent almost at a right angle, and both in front and over the anterior tibial group of muscles, and over the calf, there was a brawny feeling without fluctuation or localized tenderness.

The diagnosis of cellulitis, and probably osteomyelitis was made by Dr. Augustus Thorndike, surgeon in charge of the out-patient department. The lesion of the skin was supposed to be the remains of an erysipelas. On the day following entrance the brawny infiltration was less extensive. The temperature, however, remained over 40° C. On November 19th a vertical incision was made from the inner side of the head of the tibia about four inches downward. This revealed a tibial abscess under the periosteum which was separated for two inches both in front and behind. The cartilaginous epiphysis was separated and freely movable, and the bone of the shaft was red, rough, soft and covered with small bleeding points. The upper two inches of the shaft were removed, revealing what appeared like hard, healthy bone. A counter-opening was made in the calf, and after irrigation a sterilized dressing was applied. The

* Read before the American Pediatric Society, Deer Park, June 29, 1899.

temperature continued between 39° and 40° C. On changing the dressing in the afternoon, the lower surfaces of the upper epiphyseal cartilage looked gray and opaque, but at the next dressing several bleeding points were seen in the epiphysis and the wound looked well. A swelling had suddenly appeared over both malleoli, and an incision let out some greenish pus. A small area of the bone was curetted at this time. Some hours later a swelling had appeared over each wrist, which was drained by two incisions, one over each styloid process. No communication was found with the bare bone. The skin was also found to be pitting on pressure, and slightly reddened over the biceps.

On the following day, November 22d, the infant was found to be jaundiced. Fluctuation appeared, and the arm was freely opened from the coracoid process to the elbow. An opening was also made at the posterior border of the deltoid, as pus was discovered along the long head of the biceps. The shoulder was then irrigated and drained.

The cultures which were taken from each of these abscesses showed no growth excepting the one from the tibia, where staphylococcus aureus was found in abundance. It was afterwards found that this growth had not been found elsewhere because the oven where the cultures had been baked had been overheated.

On the following morning, the hand and arm were blue, cold and swollen. No pulse could be felt, and the tissues in the wound were almost black. The child died nine days after the first symptom of disease in the bone.

The autopsy was made three hours after death by Dr. William F. Whitney, pathologist of the hospital, and was interesting in that it showed no abscesses which could not be traced to multiple osteomyelitis. There was an almost entire absence of pathological changes in the viscera. A separation of the epiphysis had occurred at the lower end of the left tibia and fibula, the upper end of the left femur, the lower end of both radii and ulnæ, and the upper end of the right humerus, with softening of the bone and pus. No thrombi were found in the right axillary vessels, the whole right arm to the wrist being swollen and discolored, and on cutting into it a red serous fluid flowed out of this phlegmonous inflammation. Cultures from the heart's blood, kidneys and liver, showed no growth, but from the hip

joint and tibial marrow, there was an abundance of pure staphyloccus aureus, and from the phlegmonous arm a faint growth of streptococci. Blood serum was the culture medium.

The case shows a rapid septic infection confined to the bone marrow and bone of the shafts. Several long bones were affected, unaccompanied by any inflammation of the lymphatic glands or of the internal organs.

Pure cultures of staphyloccus aureus were obtained from the left tibia and hip, and as there was no discernible difference in the appearance of the three bones, it is probable that the same micro-organisms had existed in all the inflamed bones. The streptococcus infection of the arm was probably due to accidental inoculation at the time of the operation. The shoulder and hip joint contained pus, but the knee and wrist escaped. This is to be explained by the anatomical relation of the epiphysis to the capsule of the joint. When the epiphyseal line reaches within the joint capsule, pus can reach the joint, whenever the epiphysis is separated by suppuration, and this relationship existed in the hip and shoulder joints. In the wrist the capsule is inserted into the epiphysis of the radius and ulna, and not into the shaft, so that pus to reach the joint has to perforate the cartilaginous epiphysis. This is a more difficult thing than suppuration of the epiphysis. The same is true of the upper epiphysis of the tibia, for the capsular ligament of the knee does not cross the epiphysis, but is inserted into it; therefore, when suppuration occurs, the pus burrows under the periosteum, but does not break into the joint.

As to treatment there are two chief indications; first, prophylactic treatment which should be the prevention of septic infection of the cord and of the wound after the cord has fallen off. Second, where osteomyelitis of the shaft of a long bone is shown at operation, all of the affected portions should be removed, even if the entire shaft is taken, experience having shown that new bone will soon form, and that a serviceable limb is the usual result in the leg and forearm.

Acute arthritis of infants is osteomyelitis attended by suppuration in the joints. The joint infection may come either from separation of the epiphysis, which is wholly or in part intra-capsular, or from a growth of pyogenic organisms along the blood or lymph channels of the epiphysis, frequently setting up osteomyelitis of the ossified portion of the epiphysis and spreading

thence into the joints. The two affections, therefore, represent different phases of bone infection rather than different diseases of the bone.

According to Dr. Edward H. Nichols, who has written an excellent monograph on this subject, acute infectious osteomyelitis is (1) an acute inflammation of the bone due to any one of a number of pathogenic organisms, hence osteomyelitis is not a specific disease.

2. The staphyloccus pyogenes aureus is the organism that most commonly produces the disease.

3. An early period of development, and the exanthemata predispose to osteomyelitis.

4. Osteomyelitis generally attacks the shaft of the bone, while tuberculosis generally the epiphyses.

5. The process may attack the epiphysis and extend to the joint.

197 COMMONWEALTH AVENUE.

Eruption of Varicella Confined to the Eyelids.—Sattler (*Columbus Medical Journal*) describes the case of a little girl who was at first supposed to be suffering from gonorrhœal infection of the eye, and it happened that she had also vaginitis, which increased the probability of the supposition. There was tense and painful œdema of the upper lid of the right eye, and two distinct pustular eruptions about the size of a split pea were present at the lid margin. The largest near the inner canthus had ruptured. The swelling of the lid was so tense and the conjunctiva so chemotic that it was impossible to inspect the cornea. There was a small quantity of watery straw-colored discharge. Numerous cases of chicken-pox had occurred in the neighborhood, and two of the older children had an eruption resembling varicella. There were also the constitutional symptoms of chicken-pox. Bacteriological examination failed to discover the gonococcus, and the subsequent course and development of the case proved it to have been one of varicella with limitation of the eruption to the eyelids; on this account it was one of unusual severity. The child recovered with two cicatricial depressions at the lid margin.—*British Medical Journal.*

SCORBUTIC MEMBRANOUS COLITIS.*

BY J. HENRY FRUITNIGHT, M.D.,
New York.

On the ninth day of February of the present year I was called to visit professionally J. B., aged nine years, for what his parents thought was rheumatism. The boy had had tenderness and swelling, but no redness, about the left wrist, left knee and right ankle joints. The appearance of an eruption in the neighborhood of the joints just named alarmed his parents and led them to call in medical advice. The boy was pale and rather puny, and not as well developed as he should have been. This was the more surprising as he was the child of a wealthy family who had abundant means to promote his physical welfare.

On examination I found the joints already referred to exquisitely tender to the touch and considerably swollen. The eruption alluded to was petechial in character, and was profuse near the joints involved. On closer examination, however, some petechiæ were also discovered scattered over different parts of his body. His gums were soft and spongy, and bled a little on pressure, though the buccal mucous membrane in general had an anæmic appearance. He had a temperature of 102½°, and his pulse was feeble in tension, beating 102 to the minute.

On inquiry it was elicited that the boy did not eat any vegetables or fruit, subsisting mainly on ham, bacon, bread, and coffee, although the table was abundantly supplied with all that the markets afforded. In explanation of this depraved appetite on the part of the boy, the father said that when he was about three years old the boy had had some affection of the digestive organs, which was accompanied by prolonged anorexia. The father said he had become discouraged, when finally the child began to eat of ham. When the child began to eat this the father became so elated that he encouraged the boy, and in this manner an appetite for this kind of food was created, the father permitting the child to indulge its appetite in this direction ever since.

On the second day of my attendance the boy complained of a severe pain in the left inguinal region. The pain was so

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severe that he almost went into collapse. At the same time his temperature rose to 102° and his pulse became feeble and flickering. The pain was overcome by the administration of opiates, though at the time the exact cause of the pain could not be recognized. I neglected to say that the patient had been constipated. A simple enema of hot soap-suds and oil was administered. A free evacuation was secured, and with it came away a piece of pseudo-membrane about five inches in length and two inches in width, mucoid in character, dark red in color, and very friable. The abdominal pain ceased, and in a little while the temperature had fallen to 100°.

As a result of the examination of the patient on the occasion of my first visit, the diagnosis of scurvy was made, for the clinical history was certainly a characteristic one. The occurrence of the abdominal complication led me to add to this diagnosis that of scorbutic membranous colitis.

The treatment inaugurated when the patient was first seen was that which experience has established as the proper and efficient one for such cases. Fruit juices, particularly orange juice, was given in large quantities, and also beef juice. Medicinal remedies were employed only to palliate symptoms *pro re nata*. Improvement began very promptly, and in about a fortnight the boy was up and about. The family was much scandalized to think that a case of this disease should have occurred among them. I thereupon insisted that the boy should be compelled to partake of a mixed diet, embracing a large variety of fruit, vegetables and fresh meat, and that he be sent to the country for a long period. This was done, and to-day the boy is healthier and stronger than he ever has been, and has developed markedly in physical and mental capabilities.

Though I have seen quite a large number of cases of scurvy, and am conversant with about all that has been written on the subject as relating to children, I have failed hitherto to come across a case accompanied by the expulsion of a pseudo-membrane, though I have had cases in which there were bloody evacuations. As we know, in the course of scurvy, we may sometimes meet with extensive ecchymoses, as, for instance, in the conjunctiva and the so-called scorbutic black eye. It seems to me that in this case which I report there very probably was an ecchymosis in the mucous membrane of the lower portion of the descending colon, and in due time the pseudo-membrane was

cast off. Analogy would seem to indicate this to be a plausible explanation of this clinical manifestation. The patient never had an attack of this description before nor since, nor can this attack be considered as an example of that variety of recurring membranous enteritis or colitis which is not infrequently encountered in adults but only exceptionally met with in children.

It has been demonstrated that in adults a neurotic condition, such as hysteria or neurasthenia, predisposes to the development of a membranous enteritis or colitis. I must admit in this connection that my patient was of a neurotic character, but I do not think that the occurrence of the membranous colitis in his case was at all influenced by that factor.

In membranous enteritis or colitis the mucous masses usually present a grayish-white appearance; in my case it will be observed the color was that of clotted blood. This would favor the theory that there had been an ecchymosis present in the mucous membrane of the bowel. Microscopically this mass appeared of a somewhat fibrillary character with blood corpuscles enmeshed in it.

161 WEST FIFTY-SEVENTH STREET.

Addison's Disease in Children, with Report of a Case.—Lartigau and Happel (*Albany Medical Annals*) review the history of Addison's disease, and report a case occurring in a boy of twelve, who died with characteristic symptoms. A very careful autopsy was made and reported at length. Both adrenal glands were enlarged, of firm consistency, with calcarious deposits. The appearance of the surface, on section, is similar in both, and consists in mottling, two diffuse areas of yellow, suggestive of caseous material, and elsewhere the surface presented a yellow-brown color. In the right adrenal, the medullary portion was occupied by circumscribed or diffuse areas of calcarious matter which took the eosin stain. In the remaining portion of the medulla, in the cortical areas, were seen diffuse extensive patches containing small, round and elongated cells, the nuclei of which stained faintly and corresponded in their morphology to epithelioid cells, among which were small, round cells, and also a few giant cells of the Langhan's type. Other portions showed areas of caseous degeneration. Of sections stained by the carbol-fuchsin method for tubercle bacilli, only 2 in 8 showed a scanty number of the bacilli. The left adrenal was similarly but less extensively affected. Tubercle bacilli were not found elsewhere, as might be expected.—*International Med. Magazine.*

INFANTILE SCURVY—MILD TYPE.*

BY FRANCIS HUBER, M.D.,
New York.

Very little difficulty is experienced in arriving at a diagnosis of infantile scurvy, when petechiæ and hemorrhages have occurred and the gums are affected in a characteristic manner. In cases not so pronounced the absence of voluntary motion in the lower limbs, the fusiform swelling of the long bones, particularly of the femora (due to subperiosteal hemorrhages) and the associated tenderness leave little doubt as to the true nature of the case. In mild types of the disease, unfortunately quite common, none of the usual symptoms are present and the affection is very apt to be overlooked. The swellings are absent, the gums appear natural, the general condition may be excellent and nothing abnormal is found; the child, however, is restless, and cries when moved or taken up. Frequently a general hyperæsthesia appears to exist.

The tenderness, which is so pronounced in advanced cases, is found, but to a lesser extent, in the class now under discussion, principally above the knees, about the ankle, shoulder or hip. This symptom is not constant, sometimes it is fairly well marked and at other times not appreciable. In a recent case observed in a well-nourished child brought up on condensed milk, a trifling swelling over the left ankle and about left hip with great tenderness and inability to move the limbs, disappeared in a few days after the diet was changed to boiled milk and barley water, the juice of an orange being allowed daily. These symptoms had been noticed but four or five days.

A very interesting and instructive case was referred to me some time ago. A child seven months of age, born in the country, was weaned when a few weeks old, the mother not being able to nurse, as she suffered from fissured nipples and subsequent mammary abcesses.

Mellin's Food was first given. A change to malted milk was made when the family moved to the city. Furthermore, the infant was kept closely confined to the house, not being taken out for fear of catching cold. The combined influence of a want

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of fresh air and improper food soon manifested itself in a condition of marasmus.

Vomiting and diarrhœa added to the gravity of the case. From the general history scurvy was suspected and a careful examination accordingly made. There was no history of blood in the stools, no evidence of petechiæ or subcutaneous hemorrhages, no fusiform swellings of the bones to be found, nor were the gums in a spongy condition.

Craniotabes, beading of the ribs, and absence of hair in the occipital region, with sweating of the head, pointed to rickets, in an active stage. The examination, as far as scurvy was concerned, was negative. It is true that the lower limbs were slightly rigid, and the movements somewhat restricted; these symptoms were attributed at the time to the lowered vitality of the little patient.

Three-drop doses of the elixir of phosphorous were ordered to be given three times a day and the child was ordered to be taken out. At first one part of milk, one of lime water and four of barley water were advised; four ounces of this mixture to be given every two hours. The quantity of milk was gradually increased, until half milk and half barley water were reached, six ounces given at each feeding. In addition two ounces of beef soup were allowed. Several weeks elapsed before the child was seen again. The general condition had improved, the child gained in flesh and strength. As constipation succeeded the diarrhœa, oatmeal water was used in place of barley to dilute the milk. Also advised daily injection to keep bowels open. In spite of a decided improvement in many respects, the mother stated that the child continued to be restless, appeared to be in pain, and was somewhat tender.

The gums were not swollen or spongy, no petechiæ or fusiform swellings present. Notwithstanding the absence of these symptoms, as the digestion was good and no urinary symptoms present the tenderness and restlessness, in the absence of other causes, were considered to be due to a mild degree of scurvy. The treatment referred to above was continued and the juice of one orange was given daily. Three days later, it was reported that the little one was much quieter and slept undisturbed for several hours at a time. Heretofore after each feeding, the child still seemed to be hungry; when the orange juice was added to the treatment the little one was satisfied and

would rest quietly after the bottle had been emptied. The bowels still somewhat constipated, moved more readily than formerly. The further progress of the case was satisfactory.

A short time ago, in conversation with a friend, a case of rachitic twins a year old was incidentally referred to and an opinion requested. In addition to the breast given for six months they received sterilized milk with varying proportions of rice, barley or oatmeal water, also beef broth or soup. They were taken out frequently. Though fed often and in large amounts they cried incessantly, so that it was necessary now and then to give them small doses of Dover's powder. In reviewing the cases it was found that both the children were rachitic; no hemorrhages, swellings or abnormal conditions of the gum could be discovered. Further careful questioning failed to reveal any intestinal or urinary complication. The crying, tenderness, and restlessness had existed for months. The various features of the case were discussed, and though no swelling or hemorrhages existed, the suggestion was offered that a mild grade of scurvy was present and it would be well to give some fruit juice. A few days later the doctor volunteered the information that the remedy acted like a charm and seemed to be a "specific."

For the first time in months the little ones rested and passed the night comfortably. Though the quantity had not been increased and no other change was made in the diet, except to substitute milk, slightly boiled for sterilized, the children now were quiet after feeding and seemed to be fully satisfied.

Instances might be multiplied. The cases are not common in dispensary practice or among the poor, who allow the children to pick from the table, it is true, to the detriment of the stomach, but they escape scurvy. Among the better classes the disease is frequently met with, the little one receiving the best of care, expensive preparations being allowed, and every article of food is not only cooked, but thoroughly sterilized. This point has been emphasized by a well-known advocate of fresh, raw milk as the best of all foods for the artificial nourishment of infants—provided the milk is procured under such conditions that all danger of contamination is eliminated.

In view of the improvement in these and other instances, it would appear to be a good plan in cases of artificial feeding to allow a small amount of fresh fruit juices as a routine plan, when-

ever restlessness and tenderness exist and the little patients do not appear to be satisfied with the bottle.

To recapitulate, the cases thus far studied have occurred in children brought up on condensed milk, artificial foods of various kinds, sterilized milk diluted with water or cereals. The patients without exception, belonged to the better classes and all were rachitic. The prominent symptoms were tenderness, restlessness, and prolonged spells of screaming and crying; no digestive disturbances, vomiting, colicky pains, etc., were noted. Though fed regularly, they never seemed to have enough. The duration of the symptoms varied from a week to several months. In not a single case did hemorrhages occur, and in but one instance were slight swellings observed. Though the two symptoms marked rigidity of the thighs and inability to move the lower extremities, so characteristic of severe cases were absent, the legs were stiff and did not move with the freedom observed in health.

The rapid improvement in the condition of the children, following the application of the therapeutic test, favors the position taken and may be regarded as an additional point in corroboration of the diagnosis of mild infantile scurvy.

209 EAST SEVENTEENTH STREET.

An Epidemic of Jaundice in Children.—M. Fringuet reports in *La Presse Médicale* an epidemic occurring in the pupils attending the same school and occupying the same room. The cases were seven in number, and the ages of the children varied from seven to thirteen years. Four were boys. Five resided in one village and two in another. The reporter is at a loss to account for the epidemic, which was by no means severe; in all the cases the jaundice was marked, and the symptoms were much the same, being a general weakness, loss of appetite, impairment of digestion, with occasional nausea and vomiting and nosebleed. In all cases the liver was enlarged, and in some there was tenderness on pressure. In all the cases the pulse was remarkably slow, and this lasted after the liver had returned to its normal size. In one patient the pulse was 55 and in another 58, while at the time there was no reaction for bile in the urine. After convalescence set in the icterus disappeared very rapidly.—*Medicine.*

THE USE OF GRUELS AS DILUENTS OF COW'S MILK.*

BY HENRY DWIGHT CHAPIN, M.D.,

Professor of Diseases of Children at the New York Post Graduate Medical School and Hospital.

The question as to the best method of acting on the casein of cow's milk in the way of attenuating and modifying the clot has been much discussed. Although it has long been believed that decoctions of the cereals are most efficient for such action, the modifying effect of gruels used in this way has been questioned, so that the writer instituted a series of experiments for the purpose of further studying the problem. He is indebted to Prof. Graham Lusk, for the use of his physiological laboratory and for kind co-operation in the work.

The following three solutions were treated with liquid rennet: (1) Plain cow's milk 50 c.c.; (2) cow's milk 25 c.c., water 25 c.c.; (3) cow's milk 25 c.c., barley-water 25 c.c.

After inverting each tube three times it was warmed to 40° C. on a water bath. Then 3 c.c. liquid rennet was added and each tube again inverted three times. The tubes were allowed to stand for ten minutes at a temperature of 40° C. Each tube was then inverted three times, and the contents were poured into large glass beakers. The following were the results: (1) Solid clot; (2) large, tough clots; (3) smaller, more flocculent clots. After standing until the clots had subsided to the bottom of the beakers, the supernatant fluid in (2) and (3) was carefully decanted to allow a more careful inspection of the clots. A mass of clot from (2) and (3) was next placed in separate test-tubes and well covered with water. Each test-tube was then inverted three times. This agitation caused the clot in (3) to break apart, but that in (2) retained its cohesiveness.

These experiments were repeated several times, with the same results, with one exception. In this case, tough, stringy clots were thrown down by the rennet in the solution of barley-water and milk, and we were at a loss to account for this result so different from all the other experiments. It was finally found that, by mistake, a preparation of barley-water two days old

*Read before the American Pediatric Society, Deer Park, June 28, 1899.

had been used, instead of a freshly prepared solution. This barley-water was fermenting and very acid. When fresh barley-water was used, the small curds were thrown down as before. This shows the necessity of always using a freshly made gruel as a diluent of cow's milk if a favorable effect upon the curd is to be obtained.

An experiment in digesting clots (2) and (3) was made as follows: Portions of each clot of similar size were placed in beakers and covered with artificial gastric juice. They were then placed in an incubator and kept at the temperature of the body for twelve hours. The contents of beaker (3) were apparently more fluid and changed by digestion than beaker (2).

Experiments were next made with a healthy dog with a gastric fistula that had been produced for the purpose. They were performed on consecutive days, early in the afternoon, the dog having fasted from the previous evening.

(1) 50 c.c. milk and 50 c.c. barley-water were mixed, warmed, and given to the dog by mouth. This solution remained in the stomach for ten minutes, when the fistula was opened and the contents of the stomach were removed, consisting of 85 c. c. of changed milk with the addition of some frothy mucus. The reaction was slightly acid to litmus paper. The stomach was then washed out with distilled water, the water coming away clear. The stomach contents were placed in a glass beaker for inspection. The milk was clotted, with the curds fairly soft and flocculent.

(2) 50 c.c. milk and 50 c.c. water were mixed, warmed, and given to the dog by mouth. At the end of ten minutes the fistula was opened and 90 c.c. of semi-fluid contents were removed. The reaction was slightly acid to litmus paper, but tests showed there was no free acid in the contents removed. The stomach was washed out with distilled water. The stomach contents were placed in a glass beaker for inspection. The clots tend to separate in larger masses than in experiment (1). These experiments were repeated with essentially the same results.

(3) 50 c.c. milk and 50 c.c. barley-water were mixed, warmed and given to the dog by mouth. This solution remained in the stomach half an hour, when the fistula was opened and the contents were removed. The reaction was very acid. The curds were fairly fine and disseminated through the mass, apparently partially digested.

(4) 50 c.c. milk and 50 c.c. water were mixed, warmed, and given to the dog by mouth. The mixture remained in the stomach half an hour, when the fistula was opened and the contents were removed. The reaction was very acid. The curds were larger and collected more in masses than in experiment (3).

The curdling of milk by gastric juice or rennet must not be confused with the precipitation of casein by an acid. Rennet is a clotting enzyme which changes casein into a semi-fibrous mass that has a strong tendency to contract and harden, especially on the outside. Lactic acid accelerates the action of rennet, and the rapidity with which the curds contract and harden depends largely upon the quantity of lactic acid present. Rennet will not coagulate casein in the absence of the salts of lime. Milk that has been dialyzed to remove the salts, or milk that has been boiled or pasteurized will not coagulate well with rennet. After the addition of lime water and a little salt to dialyzed, pasteurized, or boiled milk, rennet acts with great ease. Lime water contains about ten grains Ca ($O H_2$) to the pint, so the beneficial results obtained by adding a small quantity of lime water to milk probably do not come so much from such a feeble effort at neutralizing the acidity of the milk as by allowing the rennet to act to better advantage.

The common objection to the use of gruels as diluents is that the young nursling should not be given starchy food in any form, as its digestive organs cannot cope with this food principle. While large quantities of starch should be withheld in infancy, even the youngest baby can tolerate and digest a small and proper amount. It may be of interest in this connection to glance at one of the more recent analyses of the amount of starch in certain cereals, in comparison with older analyses. Reference is made to a report of the U. S. Department of Agriculture (*Bulletin No. 34*), upon the carbohydrates found in wheat and maize. These cereals are shown to contain a large variety of carbohydrates, among which the following have been quantitatively determined:

	Per cent.
Sucrose	0.62 to 0.70
Invert sugar	None " 0.08
Dextrin	0.3 " 0.40
Starch	30.0 " 42.00
Pentosans and hemicelluloses	4.0 " 5.00
Fibre	2.0 " 2.50

According to the older analyses the cereal grains contain from 70 per cent. upward of carbohydrates, although the foundation for this rests not on specific analytical determination, as in the above analysis, but on estimates "by difference." Thus the newer analysis shows a discrepancy amounting to 20 per cent. or more of the entire material between the actual amounts of carbohydrates found in the materials studied and the amounts indicated in many of the recorded analyses in which the nitrogen-free extract determined "by difference" has been regarded as wholly of carbohydrate matter. This discrepancy introduces not only important errors into the estimation of the nutritive value of foods based on the earlier analyses, but on their digestibility as well. Any disadvantage in the employment of wheat or barley flour from the starch contained in these cereals in very young infants may be easily overcome by dextrinizing the gruels.

Experiments made by the writer also show that dextrinized gruels are more efficient attenuants than plain gruels, the former producing a more spongy curd than can readily be acted on by the gastric juice. Plain gruels and milk, with rennet, form rather gelatinous curds. Upon dropping them into a solution of iodine and iodide of potassium they will at once be colored blue. After washing and breaking the curds it will be seen that the blue color does not extend into the curd, and that there is no yellow coloration, showing that the proteids are not thoroughly exposed. In a gruel of the same strength, if the starch is dextrinized and mixed with milk and rennet, a curd will be formed that falls apart upon slight agitation. Drop some of this curd into the solution of iodine and iodide of potassium and it will be colored yellow, showing a larger surface of proteids exposed. The reason dextrinized gruel has such an effect on the curd is that, as the starch has largely been converted into soluble forms, the gruel is composed, in great extent, of the cell walls of the cereal from which it is made. This cellulose is very flocculent, and when dispersed through the curd tends to prevent contraction; and, as there is little adhesive material present, the curd breaks apart rather easily. This explains why the "flour ball" sometimes gives better results than a plain gruel, as the starch is more soluble than in plain gruels. An easy, rapid and simple method of dextrinizing gruel is by the addition of diastase. Most of the commercial malt extracts are sufficiently active in diastase to

produce the desired effect. The writer, however, prefers the use of diastase itself as being both speedy and efficient. It can either be produced cheaply at home or purchased at the nearest drug store. A simple decoction of diastase may be made as follows: A tablespoonful of malted barley grains, crushed, is put in a cup and enough cold water added to cover it, usually two tablespoonfuls, as the malt quickly absorbs some of the water. This is prepared in the evening and placed in the refrigerator over night. In the morning the water, looking like thin tea, is removed by a spoon or strained off, and is ready for use. About a tablespoonful of this solution can be thus procured and is very active in diastase. It is sufficient to dextrinize a pint of gruel in ten or fifteen minutes. The gruel is made as follows: A tablespoonful of wheat flour or barley flour is beaten up into a thin paste with a little cold water and then stirred in a pint of water, which is boiled for fifteen minutes. When cool enough to be tasted, a tablespoonful of the above solution or a teaspoooonful of malt extract or preparation of diastase* is added and the mixture stirred as furthur cooling takes place. The great bulk, if not all of the starch, will be thus dextrinized in about fifteen minutes. The previous boiling is for the purpose of gelatinizing the starch so that the diastase can act to advantage. The gruel is now ready to be used as a diluent of cow's milk, and can be assimilated by the youngest and weakest infant.

51 WEST FIFTY-FIRST STREET.

DISCUSSION.

DR. GRAHAM.—If a child is being fed on the usual milk formula for its age and is developing according to the usual standard, I would like to ask Dr. Chapin when he believes it advisable to begin the administration of gruel.

DR. MORSE.—I wish that Dr. Chapin had given us the analyses of the gruels after they were made rather than the analyses of the grains. I have an analysis of barley water here, and it is fat .05 per cent., proteids .09 per cent., starch 1.63 per cent. and no sugar.

*The following preparations are procurable if one does not care to prepare the diastase: Forbes' diastase, Taka-diastase, Fairchild's pancreatic diastase, and a glycerite of diastase known as Cereo, which is made for dextrinizing gruels.

DR. MILLER.—It seems to me that babies who are brought up on modified milk are sometimes delayed in cutting their teeth. In such instances I have repeatedly substituted a gruel, still maintaining the same proportions of modified milk.

DR. JENNINGS.—During the last year of my service at the Foundling Asylum I experimented with gruels in moderate amount and my observation was that infants that were not doing quite so well as they should, not infrequently began to improve when cereal feeding was adopted. The method I employed was simply the administration of gruels with the other mixture. From clinical observation my experience points to cereal feeding as a useful adjunct.

DR. BLACKADER.—The principal indications that alimentation in an infant is proceeding in a satisfactory manner may be considered to be a weekly gain in weight of at least four ounces to six ounces, freedom from indigestion, and the fact that the infant obtains a sufficient amount of quiet sleep. In some of these respects I think I have occasionally obtained a distinct improvement, by the addition of a moderate quantity of cereal gruel to carefully modified milk. Some years ago I was doubtful that the addition of any gruel could modify the coagulability of milk ; but, for the past two years, clinical evidence has convinced me that some increase of digestibility does take place.

DR. ROTCH.—I would like to ask Dr. Jennings what method of changing the percentages he used.

DR. JENNINGS.—The method was simply that which would be used in the home modification of milk and hence could not be perfectly accurate.

DR. CHAPIN.—I have fed children on laboratory milk, where the percentages were accurate and where there was not the gain that there should be until the addition of cereals was made.

DR. BLACKADER.—In delicate infants in whom artificial feeding has to be commenced shortly after birth, I have occasionally had recourse to Meig's combination of arrowroot and gelatine as a diluent. In older children I sometimes use barley or oatmeal water in the same way. These are added to my milk modifications, at the Walker-Gordon laboratory, in the proportion I may think necessary for each case. For infants under nine months I never use barley or oatmeal as a food, but simply as a diluent.

DR. ROTCH.—It is very important in all these questions of feeding to know what we are using. An analysis was made some years ago by our best chemist in Harvard and it showed that there is very little starch in barley water. As to Dr. Jennings' experiments, you cannot test the value of percentage feeding with home modifications. You can make an approach to it but it is not a fair test.

The writer of the paper some years ago wrote on the question of foreign elements in infants' food, contending that it was well to introduce them. I have always contended that it was not right to introduce elements that do not exist in human milk. At that time the writer of the paper proposed the use of peroxide of hydrogen for preserving milk. You know what the results were. Now I suppose the same sort of a contest is to be fought over these cereals.

This question of cereals has been discussed for a century and some men say that they think it helps the children. I ask, however, for an analysis of what they are using and if it is simply water, or the same as water, why not say so. The more we know of percentage feeding the fewer are the times that we have to put aside the feeding with milk. Human milk is the best food for babies and for ages they have thrived on it better than on anything else. Human milk contains no starch and the less starch you have in your diluent the better for the baby. I believe in following nature as much as possible and you are not doing so when you add these cereals.

DR. BLACKADER.—May I ask Dr. Rotch if he considers that the albuminoids of cow's milk and those of mother's milk are the same except for percentage?

DR. ROTCH.—I do not say so. That has been attributed to me, but I never said it. Our best physiological chemist at Harvard has not been able to answer that question for me, but that is no reason why we should not make use of the percentage method. There is possibly some difference, but as yet we do not know what it is.

DR. BLACKADER.—I fully believe with Dr. Rotch in percentage feeding, but I do think that we can to some slight extent modify the albuminoids of cow's milk by the addition of cereals.

DR. RACHFORD.—During the past three years I have been interested in some experimental work on intestinal digestion. This work has not yet been published, but it is possible that it may have some application to this discussion. In the first place let us note that digestion goes on for the most part in the intestinal canal rather than in the stomach. This may be offered as a criticism to Dr. Chapin's report concerning digestion in the stomach of the dog.

If there is anything established by experimental research it is that the starches when properly prepared are easily digested by almost any juices, whether it be stomach juices, pancreatic juice or even the bile itself. The starch that I used in my experiments was pulverized wheat starch mixed with water in definite percentages. These mixtures were digested very rapidly, so that I got as much as 25 per cent. to 50 per cent. of starch digestion in some of these experiments within thirty

minutes. I think, therefore, it is probable that if starch be mixed with children's foods in a form to be readily digested, such as Dr. Chapin has suggested, that the starch would be very readily changed in the intestinal canal even of the infant.

Another point I want to call attention to, is that starch digestion goes on more rapidly when it takes place in the presence of proteid digestion, or of fat digestion. I was very much impressed with this fact in studying the digestion of various food stuffs. Both albumens and starches are digested by pancreatic juice more rapidly if the digestion of these foods is carried on together. The presence of one of the food stuffs seems to expedite the action of the juices on any one of the other food stuffs.

DR. ROTCH.—The amylolytic function is not developed in the early months of life. It is a well known fact that a function that is being developed should not be taxed. I do not say that a certain amount of starch cannot be digested, but it is not the natural way to develop a human being. We should allow the functions to develop normally and therefore should not add a foreign element to the infant's food. The infant is prepared to take sugar, the adult to take starch and convert it into sugar and it was evidently intended that this conversion should be done for and not by the infant.

DR. GRIFFITH.—I am impressed with the belief that this Society will be better able to discuss this subject ten years hence than it is to-day. Dr. Rotch contends that some use substances that they have not analyzed and then confesses that he uses milk, the proteids of which he does not understand. We have not the knowledge to determine this question on a scientific basis and we must take into consideration clinical experience. I agree with Dr. Rotch that we should try to get a milk as near like the mother's as we can make it, and when I fail with such a modification I do not hesitate to use the addition of some cereals. I agree that barley water is nothing more than water. While taking it the child's stomach is at least getting a rest. I use it with the milk on the plan suggested by Dr. J. Forsyth Meigs. I believe the advancement made in percentage feeding is in the right direction, but until we know more of the chemistry of cow's milk, we cannot do it in every case satisfactorily.

DR. KOPLIK.—I thoroughly agree with the previous speaker and I think it is only fair to say that he should remember, in the first place, that the intestinal waste with cow's milk is sixteen times as great as with mother's milk and, in the second place, to call attention to the work of A. Keller in the Breslau clinic, who has analyzed these foods and then analyzed the feces of the children in the manner hinted at by Dr. Rachford. He has found just what Dr. Rachford stated. He also shows the points that Dr. Chapin has mentioned in regard to diastatic action. It seems to me that this is largely a matter of clinical experience.

DR. CRANDALL.—There are elements to be considered aside from the chemical analysis. Barley water is not simply water. There is certainly a physical difference that must be taken into account as well as the chemical composition. In my own experience it has not always been so difficult to get the food made in proper percentage as it has been to determine what percentage the child needed. That is largely a matter of experience; the more experience one has the more quickly he comes to the determination of the food requisite for such case, and the more satisfactorily he will feed with milk elements alone. I would not say a word against percentage modifications, in which I believe thoroughly. I understand that the point of discussion is not that all children require cereals, but that some children do better when they are used.

DR. FREEMAN.—There has been a great deal said about the improvement of children changed from modified milk to barley and milk, and I think we must bear in mind that many children may be improved by reversing the change again and substituting a simple modified milk for a barley milk. Any change will sometimes do good.

DR. DORNING.—I do not think that any one can gainsay the value of percentage feeding, or the great convenience of the Walker-Gordon laboratory, but I do not believe that any one attains a success of 100 per cent. in feeding with laboratory milk. I do not think that any one claims such a result. We find among adults differences in the digestion and assimilation of food, often the result of some acquired dyscrasia, and why may not the same conditions obtain in the case of infants? We know it to be a fact that all children fed on laborotory milk do not thrive, usually because of imperfect digestion. In a given case percentages of fat and proteids are, from time to time, carefully varied without any noticeable betterment of the infant's condition; we then add a barley or oatmeal gruel to the milk mixture and quickly note an improvement. I have had recently a troublesome case which illustrates this point. The fat was gradually reduced to 1½ per cent. and the proteids to .2 per cent., but the infant did not thrive. Finally, the proteids were increased to .5 per cent., and 40 per cent. of barley water was incorporated with the milk mixture. The digestion improved at once. In a few days the fat was increased to 2.5 per cent. and the proteids to 1 per cent. The digestion then seemed to go on normally, and the baby increased in weight. It seems to me that in this case the barley water had some positive effect; but I would hardly attribute it altogether to the nutritive value of the barley, for I believe much of the result was due to the attenuative properties of the barley water.

DR. FORCHHEIMER.—I want to put on record as one of those freaks of nature, if you please, that does not use percentage mixtures or modified milk, because in the first place I believe it

is theoretically all wrong, and secondly, because I get along without it. I base these statements upon clinical experience, which I think is of the highest importance. It is a matter of indifference to me what chemists may say, if I can get good results from gruel feeding. My experience of over twenty-two years has verified the fact that I get better results with gruel feeding than without, and under certain circumstances I cannot get along without barley water or oatmeal water. The theorists have made for us a regular bugbear of the carbohydrates, and for years I was held in fear of these things by the experiments of Korownin and Zweifel, and I have done damage to my patients by being placed in that position. On the other hand, we must not err in the other direction. I think that Liebig's food does a certain amount of damage, and all foods made on this basis do harm. But why should we throw away all this clinical experience because in the intestine of the dog or rabbit we find that one food does better or worse?

DR. COTTON.—Do we understand Dr. Forchheimer that his success comes so near 100 per cent. that he does not care to try anything else? It seems to me that if these roads all lead to Rome that must mean something. It means that we are all having trouble, and if Dr. Forchheimer has a perfectly satisfactory method he ought to teach us how to get into such a happy frame of mind. I confess that in Chicago we have not gotten that far.

DR. ROTCH.—I have not spoken of my clinical experience because I do not think that is the proper way to approach such a question. Clinical experience is frequently wrong. One reason why Dr. Forchheimer has not used modified milk is because he has never had an opportunity to do so. There is no laboratory in Cincinnati and his objections are purely theoretical. I do not object to having anything you may wish put into the food but I do wish you to know if possible what you are putting into it. You talk about nutrition being benefited by something that does not exist in the barley water. I have had cases over and over again like those reported by Dr. Dorning, but instead of giving them barley water I used plain water and had the same results. There must be something in the climate of Cincinnati that makes all babies do well upon cereals, for no where else in the world have I heard of such results.

DR. FORCHHEIMER.—I object to being understood as saying that I succeed with all the children that come under my charge. The percentage methods have not been necessary to me because I have had satisfactory results with the methods I have been using in healthy children. I cannot be made to believe that it makes very much difference whether a child gets 3 per cent. or 3.2 per cent. of fat so long as it thrives.

DR. ROTCH.—It is not small difference of a fraction that I contend for, but the question is, can you arrive at exact results better with empiricism than by exact scientific methods?

DR. CHAPIN.—With reference to my experiments with peroxide of hydrogen, I will remind you that I simply suggested it as a harmless method of preserving milk. After pasteurization was brought out I ceased all efforts in that direction. I am not a physiological chemist, and while not an authority upon the subject I understand the physiological chemists to consider the casein of cow's milk as differing from that of woman's milk; that it is not only different chemically but different physically. As to chemical composition, I am not willing to accept an analysis of a gruel without knowing the percentage of the ingredients and how it was made. I think there is some nutritive value in my gruels. The barley water is best made from barley flour and so far as I know there is but one place in the United States (Akron, Ohio), where they make a barley flour. I will close by simply stating that I believe that by means of dextrinizing the gruels they can be added with advantage.

Hemiplegia Following Diphtheria.—In an article on this subject (*Charité Annalen*) Dr. Slawyk gives an interesting account of three cases of hemiplegia following diphtheria which occurred in Prof. Heubner's clinic. Although peripheral palsies are common after diphtheria, hemiplegia from cerebral changes is one of the rarest of events in the diphtheria of childhood. Henoch, in the latest edition of his work on the diseases of children, says that he has only seen four cases of hemiplegia following diphtheria, and Baginsky only saw three in 3,000 cases. Bokai, in a very extensive field in the children's hospital in Budapest, saw only five cases during nineteen years. The three cases observed by Slawyk occurred in children during convalescence from severe attacks of diphtheria. In every case there were marked signs of cardiac weakness, and also of nephritis. In two cases there was paralysis of the palate. The hemiplegia set in on the 22nd, 19th and 18th days respectively, after the beginning of the diphtheria. Restlessness, headache and elevation of temperature accompanied the onset of the paralysis. Delirium, loss of consciousness or convulsions was not present in any of the cases.—*Montreal Medical Journal.*

DIPHTHERIA AND SERUM-THERAPY, WITH ESPECIAL REFERENCE TO EXPERIENCE IN CUBA.

BY JOAQUIN L. DUEÑAS, M.D.,
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Notwithstanding the suggestive work recently published by Dr. Herman, of Brooklyn, upon the failure of antitoxin in the treatment of diphtheria, it is impossible to overlook the fact of lower death-rate since the injections of anti-diphtheric serum in the treatment of that disease were first employed.

In the island of Cuba, as there are no children's hospitals where statistical studies might be carried out with the required exactness, it has not been possible to demonstrate numerically the advantages of the new treatment. The lowering of the mortality in diphtheria might, however, be inferred from the partial statistics of many practitioners, which all agree in regard to the favorable results of serum-therapy.

Dr. Dávalos published in 1895 a report of twenty cases of diphtheria treated by himself, with a death-rate of 10 per cent.; all pharyngeal cases recovered; laryngeal (four cases) showed a mortality of 50 per cent.; but he confesses that the patients were in such bad condition that he used the antitoxin only as a satisfaction for the parents.

Gonzalez O'Brien refers to a series of ten deaths out of eleven children taken sick with diphtheria, before sero-therapy was inaugurated, and gives a history of four severe cases all cured by means of the antitoxin treatment. Gutierrez Lee, Dumas, Coronado, Desvernine, Sanchez Quirós (Habana), Ledon (Santa Clara), Garcia Rijo (Sancti-Spiritus), Madan, Fomas (Matanzas), and many other Cuban physicians have published interesting reports of severe cases of diphtheria, all of which recovered, which would probably have died if they had occurred before 1895. I would say that bacteriological examination always confirmed the clinical diagnosis.

As to my personal experience, I would say that I have not lost any patient of pharyngeal or laryngeal diphtheria, either pure or associated with other germs, since I began the employment of antitoxin. A few weeks before the arrival in Havana of the first bottles of Behring's serum, I lost my last patient with diphtheria, a girl, six years old, from heart failure and uremic condition.

Since sero-therapy made its entrance into Havana, in December, 1895, I have attended twenty-five cases of sore throats. Of these, eight cases were proved to be of diphtheritic nature by bacteriological investigation. In all of them detachment of the false membrane occurred very early; reproduction was seen only once. I never employed more than two or three injections, sometimes only one. The most severe case was a nursling, thirteen months old, who was brought to my office in very poor condition on the fifth day of its disease. Besides the large diphtheritic membrane that could be seen on the fauces, symptoms of stenosis, beginning cyanosis, cough and restlessness revealed laryngeal involvement. Three hours after my examination, the first injection was given. On two or three occasions the baby seemed to be at the point of death under paroxysms of suffocation, which were probably due to the detachment of the patches, as he was greatly relieved when some large pieces were expelled. Four days after the first injection, of which three were given, the patient recovered and was discharged cured.

During my residence in Tampa, from January, 1896, until June, 1897, I attended three children with diphtheria, two of them in serious condition, and I saw in consultation two others. My cases were pharyngeal, but in the last two, symptoms of progressive laryngeal stenosis appeared, which were dissipated only by throwing up of membranes. The patients made a rapid recovery. Bacteriological examination could not be practiced, but in all cases the clinical manifestations—false membranes in the fauces, attended with hoarseness, stridulous cough, dyspnœa, albuminuria, etc., were always present. All these children were treated by the antitoxin.

Afterwards I attended, in Philadelphia, a strong child, four years old, when sick with apparently mild tonsillar diphtheria. Antitoxin treatment being refused by the father, I withdrew from the case, and the child subsequently died.

Since my return to Havana, I have had under my care two cases of pharyngeal diphtheria, which made perfect recovery after injected with the serum. The foregoing cases make up a very fortunate series, as the mortality was *nil*. The only case that terminated by death, the child ill in Philadelphia, would have been saved if he had received the injection before the extension of the membranes to the larynx. This has been a very

common result in Cuba, which might be partly attributed to the higher immunizing power of the serum prepared in the laboratory of *La Cronica Médico-Quirurgica*, founded by its director, Dr. I. Santos Fernandez. According to the studies of Drs. Dávalos and Acosta, who are in charge of all the technical work, the serum of Havana is ten times stronger than the original one of Roux, and stronger than the highest of Behring (1,500 units).

In regard to the indications for the employment of antitoxin, my plan is very simple. When I have no doubt of the diagnosis from a purely clinical standpoint, and the case seems to me a severe one, I use it without waiting for a bacteriological report, which I always order, however, for the purpose of confirming the diagnosis. Experience has proved to me that the laboratory investigation of pathological exudates of the throat is indispensable in making a diagnosis in many cases. When we can see a white spot on a tonsil we are not able to judge certainly as to the true nature of the illness. To support that view I would refer the following histories:

E. A., aged three-and-a-half years, lymphatic, weak boy, took sick on 17th of September, 1895. He had a small white spot on the right tonsil and an enlarged cervical gland. The general condition was good; temperature, 99°. A few Klebs-Loeffler short bacilli were found on bacteriologic examination. Local antiseptic treatment was ordered with bensoate of sodium and chlorate of potassium internally. Next day the white dot had disappeared. There was no pain nor fever; same treatment. For two days the fauces continued entirely clean. On the next, the spot reappeared showing the characters of a very thin pseudo-membrane which disappeared under irrigations of the throat. On the morning of the fifth day the membrane was larger and thicker, and I convinced the father of the danger of delaying the injection which he feared. I injected 15 c. c. of Dávalos' serum and the boy very promptly recovered.

One month later the sister of that boy, two years old, was taken sick in the same room, which had been thoroughly disinfected. She showed a small patch on the left side, with the same characters that the brother's did. Bacteriological examination was negative. Notwithstanding the first case and the enlarged gland attending the spot I did not use the serum. Antiseptics, tonics, and chlorate of potassium was the treatment. Two days afterwards a herpetic eruption made its appearance on both

legs, and for fifteen days the white dot remained unaltered and disappeared with the eruption. The throat was under daily observation, and every three or four days a bacteriological test was made. Micrococci only were found.

This girl, who is now five-and-a-half years old, was taken sick on the 26th of last April, with benign tercian intermittent malarial fever. During convalescence she had sore throat, the temperature rising to 102°. There was a white spot over the surface of the left gland. On the top of the tongue a herpetic blister appeared. It became ulcerated and lasted for one week. Bacteriological examination showed short Klebs-Loeffler bacilli in abundance. I immediately gave an injection of 20 c. c. of serum, which it was not necessary to repeat, recovery being rapid.

One might ask if the presence of Loeffler's bacillus was not purely accidental in this case, whose morbid evolution seemed to be of simple herpetic character; but that being the case, a secondary diphtheritic infection was to be feared, as the girl had the door opened to the germs and her impaired nutrition was favorable to receive them. Therefore, the withholding of serum would have been a crime in that circumstance.

A remarkable instance of danger as a consequence of temporizing is the following: On the 31st of last March, I was called to attend a girl, seven years old, affected with a pharyngitis of mild character. Both tonsils were enlarged and several white spots of different sizes were present, with tendency to coalesce. There was no fever. I began with an emetic dose of ipecac, ordering afterwards the employment of bichloride of mercury. Bacteriological examination proved it to be pure diphtheria, Loeffler's short and median-sized bacilli being present. On the 2d of April, the general condition was excellent. There was only a small spot on the throat. I complied with the mother's will and delayed the employment of serum, but added boric acid injections through the nostrils. On the 3d, the throat was free from exudate and congestion of the tonsils had subsided. In the evening of the 4th, for the first time the temperature went to 104°; the throat was covered again with white patches. On the right side, where the membrane was most extensive, the enlargement of the gland had increased enormously. Albumin appeared in the urine; one gramme per litre. I discontinued all treatment and gave 20 c.c. of serum. Three hours later the membrane came away in pieces. On the 6th of April, the throat was clear. There was only traces of albumin, and no reproduction of membrane occurred.

TROCADERO 16.

Clinical Memoranda.

A CASE OF HYDROCELE OF THE CORD FOLLOWING AN OPERATION FOR STRANGULATED INGUINAL HERNIA.*

BY BURR BURTON MOSHER, M.D.,
Brooklyn.

A patient who had been under my care for hernia and who had successfully worn a truss for several months, returned on June 9, 1896. His mother reported that the day previous, while not wearing the truss, he had been kicked by a boy on the protrusion which caused him intense pain. On examination I found an irreducible tumor in the left inguinal region, swollen and contused, hard, tender, and tense; in fact, all symptoms of strangulated hernia were present in a mild degree.

An incision was made over the tumor and the constriction relieved. Owing to the bad condition of the intestines and surrounding tissues and an enlarged cord, a modified McBurney operation was done. The patient made an agreeable recovery in about four weeks.

Sixteen weeks later there appeared in the scar another protrusion with the following characteristics: Daily increase in size from above downward, impulse on coughing, disappearance in recumbency, reappearance when in the upward position reducible, and a patulous ring.

The patient complained of weight in the abdomen and pain, especially along the left side. The history of the case, together with the above symptoms, pointed to a recurring hernia, and an operation for exploration and, if possible, a radical cure, was undertaken on August 22d.

After freeing what appeared to be the sac up to the abdominal ring, it was opened for exploration and found to contain nothing but fluid. The finger passing through the ring within the sac came into a large cavity in the abdomen filled with fluid. On pressure over the abdomen fully three pints of straw-colored fluid were expelled through this opening. The sac was sutured

* Reported to the Kings County Medical Association, March 8, 1898.

to the abdominal wound, leaving a communication into the cavity. A gauze drain was employed and the patient made a satisfactory recovery.

This case is especially interesting for several reasons. 1st, that strangulated hernias in children of four years are uncommon. 2d, that the hernia was cured by the McBurney method. 3d, that the recurring condition was a hydrocele of the cord and not a hernia, though all the symptoms pointed to the latter condition. The reason the symptoms of this hydrocele simulated so closely those of inguinal hernia was the immense size of the hydrocele and the fact that, except the reducible protrusion, it was wholly within the abdomen.

202 SCHERMERHORN STREET.

Peptonuria in Scarlet Fever.—M. Hemser (*Vratch*) records observations which he has made as to the occurrence of peptonuria in scarlet fever. The following are his conclusions: 1. The urine in scarlet fever very frequently contains peptones; they are usually present in a moderate degree, and are rarely abundant. 2. Hemser confirms the fact, observed by others, the peptonuria is not necessarily associated with albuminuria; both may be present at the same time, but the conditions are independent. 3. In cases complicated with pneumonia, peptones were seldom found in the urine, and, if present, their appearance was noted on the third day of illness, and they entirely disappeared as soon as the crisis ensued. On this point the author differs from other observers, since it is usually stated that peptonuria occurs in pneumonia as the temperature begins to fall. 4. The severity of the disease has no bearing whatever upon the occurrence of peptonuria. Indeed, according to the author's observations, it is more apt to develop in mild than in severe cases. Hence the prognostic value of peptonuria is doubtful. 5. In view of the statement made by several authors that peptonuria does not always imply that suppuration is taking place in some part of the body, it must be mentioned here that in all the cases referred to by Hemser there were constantly present inflammation of the inner ear and the lymphatic glands, with tendency to pus formation. 6. Ervant's test (potassic mercuric iodide) has often failed to produce the characteristic precipitation where peptones were proved to be present in the urine by other tests; on the other hand, it formed a precipitate when peptones could not be detected. 7. Lastly the author is inclined to discredit Schulter's statement that the production of peptonuria is greatly influenced by high temperature; in his cases no such relation between high temperature and peptonuria could be made out.—*British Medical Journal.*

STRANGULATION OF THE FŒTUS IN UTERO BY THE UMBILICAL CORD.

BY JOSEPH W. IRWIN, M.D.,
Louisville, Ky.

The following is reported because the case is rather unique. I was called on the 10th of December to see a young woman who was seven months advanced in utero-gestation. In the afternoon of the day I was called she had taken a street car ride, and in getting off the car she fell and she believed her baby suddenly died. Up to that time motion had been very strong, frequently waking her in the night.

Upon examining the abdomen with the stethoscope I could discover no sounds of the fœtal heart. I advised her to remain quiet. At the end of six days there was no evidence of life in the fœtus; labor pains began on the morning of the seventh day and she gave birth to a dead child. It was so much decomposed that in delivery a part of the skin sloughed off the body. The cord was wrapped around the neck three times, that is three loops went around the neck. The cord was drawn so tight that it had made a very marked impression into the neck and in consequence thereof the head was greatly swollen. There was an indentation so that above and below the constriction the neck was on a level with the folds of the cord. I came to the conclusion that the child had been killed in utero by this constriction of the cord, pressing not only upon the neck, but perhaps interfering with the circulation of the cord itself.

Eudermol in Scabies.—Wolters (*Therap. Monatshefte*) has tried eudermol (nicotine salicylate) in sixty-seven cases of scabies, in the form of a 1 per cent. ointment. A stronger ointment produced toxic symptoms. The advantages of eudermol are its absence of odor and the absence of stains on the linen.—*Medical Review.*

THE
ARCHIVES OF PEDIATRICS.

DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN.

DECEMBER, 1899.

Edited by FLOYD M. CRANDALL, M.D.,

Adjunct Professor of Pediatrics, New York Polyclinic; Visiting Physician, Hospital for Scarlet Fever and Diphtheria; Consulting Physician, Children's and Infants' Hospitals.

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THE ANTITOXIN TREATMENT OF DIPHTHERIA.

We have referred to this subject but little during the past year, chiefly because the fundamental question regarding the efficacy of antitoxin in diphtheria has passed from the realm of discussion and uncertainty into that of certainty. The comparative silence of this and of other medical journals should not be misunderstood. It is due to the fact that the subject is so far settled that further discussion upon the mere question of efficacy is superfluous.

In a recent editorial, the *Journal of the American Medical Association* calls particular attention to the fact that there is now but little diversity of opinion as to the utility of the antitoxin treatment of diphtheria among those who have had the largest experience, and are thus entitled to a hearing. There is, however, not an inconsiderable body of the profession who, for one reason or another, think the subject still surrounded by doubt, and thus refrain from using a therapeutic agent whose claim to confidence has been incontestably established by the results of extensive clinical experience.

To those who have not yet been convinced the editor of that journal commends for earnest consideration a masterly contribution to the literature of the antitoxin treatment of diphtheria by Goodall in the *British Medical Journal* for January 28

and February 4, 1899, in which is presented a judicial analysis of the subject in all its varied aspects.

In the article referred to, Dr. Goodall deals with very large numbers of cases and handles his statistics with great caution and good judgment. From whatever side approached, those statistics show results favorable to the treatment beyond any question. His study is not limited, however, to statistics, but he enters in detail upon the effects observed clinically.

He refers to the scepticism of the profession when the treatment was first proposed, owing to the failure of the specifics which had previously been brought forward. But the terrible fatality of the disease, the stability of the experimental evidence upon which the new treatment was based, the openness with which the preparation of the serum was made known, and the weight attaching to the observations of one so eminent in science as Roux, compelled those who were concerned in the care of large numbers of diphtheria cases to give the method a thorough and unbiassed trial. Now, at the end of more than four years, Dr. Goodall believes it can be asserted, without fear of contradiction, that all those who have employed the treatment in a sufficient number of cases have made up their minds regarding its value one way or the other, and that a large majority of these are agreed that all that was claimed for it has been fulfilled.

There are a few, it is true, who, even after more than a casual trial, are of the opposite way of thinking. There is nothing strange in this. There is not a drug or a disease upon which differences of opinion do not exist, and absolute unanimity cannot be expected upon any such subject.

Besides these two classes, there is another consisting of those who are, so to speak, of no way of thinking at all. They have either had few or no cases to treat, or they have not been able to procure the remedy, or they have not really troubled themselves about the question, but have preferred to go on with methods of treatment ancient but inefficient. The latter group, it must be said, contains no small number of practitioners.

There is now no doubt in the minds of most competent observers that the original claims made for the antitoxin treatment of diphtheria have been to a large extent verified. The treatment to-day stands absolutely established as one of the most efficient means of combating disease in the hands of the profession.

Dr. Goodall very pertinently sums up his article in the following words: "The list of drugs in the *Pharmacopœia* is long. For all, it is claimed that they are of value in the treatment of one and the other of the ills to which our flesh is heir. Yet I do not think I exaggerate when I say that few of even the most useful have been subjected to the same fierce criticism as has the antitoxin of diphtheria, and still fewer have borne the ordeal as triumphantly."

READING NOTICE JOURNALS.

Under this name the *Philadelphia Medical Journal* refers to a class of journals whose pages are given up more or less completely to articles that are practically "reading notices" of the drugs described in the advertising pages. The article referred to is based upon the letter of an advertiser who demanded space in the reading pages for an article commending the preparation which he advertised. The advertiser asserted that he "had reason to expect a favor of this sort," and that he regarded "its rejection as a failure to reciprocate." We fully agree with Dr. Gould's remarks upon the subject, which are as follows: "It is a grievous and degrading practice, this of holding that purchase of advertising space in the advertising pages gives the purchaser any right to claim or demand entrance to the reading columns. When all advertisers wholly and unreservedly give up this claim, then will they secure a more frequent admission to the reading pages, and what is said therein will then have a value at present denied to it by a suspicion of bribery that may often be unjust but which in the present state of affairs seems legitimate."

Should every reference to proprietary and even patented articles be stricken from the reading pages of medical journals? Certainly not; it is neither necessary nor desirable. Many preparations cannot be made satisfactorily by the retailing druggist, but are best made in large quantities by firms having adequate facilities. They are not necessarily objectionable because proprietary. There might not always be objection to stating the name of the maker, for much depends upon the honesty of manufacture. This must be done with great caution, however, for the wrong-doing of a few manufacturers has injured the many honorable ones and rendered the journal open to suspicion that mentions names.

Almost every one of the synthetical antipyretics and antiseptics are patented, yet the most conscientious writers refer to them constantly and every journal contains references to them. Pharmacy has advanced with other sciences, and the doctor is bound to use many of its elegant and effective preparations. Conditions of drug manufacture have materially changed during the past twenty years, and the medical editor is confronted by these conditions, and not by mere theory. It has become impossible to absolutely exclude references to every patented and proprietary article.

Where, then, shall the line be drawn? This is one of the most difficult questions the editor has to decide, because no rule can be laid down that will apply to every case. He must be guided by the character of the product, by the methods adopted by its makers, and by what he believes to be the motive of the writer, and the scientific value of what he writes. He may, therefore, with entire honesty decline a paper written by one man referring to a certain preparation, and accept that of another containing references to the same preparation.

Upon one point, however, there can be no question—the propriety of admitting papers to the reading pages at the dictation of advertisers. If this is done for one, others may demand the same favor and will be prompt to do so. The editor forth-

with loses control of his journal, and it degenerates into a simple advertising medium, valueless to the reader, for it commends alike everything advertised, and soon valueless, also, to the advertiser, for it bears the stamp of insincerity upon every page.

While this is a matter of constant annoyance to the medical editor, the remedy lies but partly with him. It rests more with the general practitioner who buys and reads medical journals. So long as he supports journals whose articles are nothing more nor less than reading notices, journals which, Judas-like, sell themselves body and soul for silver, so long will it be difficult for honest journals to thrive and for the *morale* and standard of the profession to be elevated.

NERVOUS CHILDREN.

"There is a large class of parents," says Artemus Ward, "who have an uncontrollable passion for taking their children where they will stand a chance of being frightened to death." The truth of this remark will be apparent to every pediatric practitioner. The carelessness of many parents in permitting their children to see and hear things that will harrow up their souls and freeze their young blood, is truly marvelous. It is often due to carelessness, pure and simple, or to obtuseness and failure to appreciate the feelings of a nervous child. The study of animal life is to be encouraged, but to take an impressionable child to see hideous and grotesque animals or loathsome reptiles is the refinement of cruelty. The little one dreads them by day and dreams of them by night, until some new terror takes the place of the old. Forcing a frightened child into the surf may far more than counteract all the good resulting from a visit to the sea-shore. These are but illustrations of many instances in which children are frightened unnecessarily. Even if the cause seems trivial, it is simple cruelty to force a child into places where it will certainly be terrified. It is not the way to make a child courageous or brave, but will almost infallibly have the opposite

effect. The effects of such frights upon the nervous system are often most disastrous. Many an attack of feverishness and mild illness of obscure origin could be explained by this cause could the doctor always know the facts.

RETROSPECT.

During the five years in which the present editor has shaped the policy of the ARCHIVES, it has been his constant aim to adapt it to the needs of the two classes of physicians who have been its readers—the pediatric specialist and the general practitioner. This has not been an easy task. Upon one side is the desire for articles of strictly scientific nature, which shall add to the stock of knowledge without the repetition of well known facts. Upon the other side is the need of articles of practical nature without strict reference to originality or newness of idea. Under existing circumstances, a satisfactory journal could not be maintained if designed for either of these groups of physicians alone. The strict specialists do not form a sufficiently large body to maintain a journal which would publish only the heavy scientific articles which they desire. They cannot and will not at present support such a journal. A journal on pediatrics written by general practitioners alone would be very unsatisfactory. The work of the specialist is necessary to its success and to secure his co-operation the journal must to a large degree fulfil the requirements imposed by him. In no other special journal, therefore, must such diverse demands be satisfied as in the pediatric. It has been the endeavor of the editor to accomplish the somewhat difficult task of balancing the ARCHIVES between these two classes, whose demands are in some regards diametrically opposite.

While he has attempted in the original and editorial departments to cover every phase of pediatrics, two questions have received particular attention: The securing of a better milk supply for infants and invalids; the promoting of pediatrics as a true specialty.

Having come to the unalterable belief that cow's milk is the best artificial food for infants, he has made every effort to aid in securing a pure and uncontaminated supply and to record the progress of the war that is being waged to that end.

Believing that pediatrics is the most important branch of the general practitioner's work, that it is associated with general medicine rather than obstetrics, he has endeavored to advance those ideas. While he has never contended that pediatrics should be separated in practice from general medicine, he has believed that it should be taught by special professors, and there should be men in every community so especially conversant with the diseases of children that they may with propriety be denominated pediatric specialists. He has held that pediatrics is a true specialty, inasmuch as it has a special literature, special journals, special professors, and a certain number of special practitioners.

VALEDICTORY.

With this number of the ARCHIVES the present editor retires from editorial work. He has taken this step with great reluctance but has been forced to do so by the growing demands of private practice and the conviction that his physical strength is not longer equal to both burdens.

To Dr. Walter Lester Carr, who will assume the editorship with the ensuing year, he extends the sincerest good wishes. His literary ability, professional attainments, and wide experience in pediatrics render success a foregone conclusion. He feels the keenest pleasure in having so worthy a successor.

To Messrs. E. B. Treat & Co. he wishes to express sincere thanks for never-failing courtesy and for a liberality which has never been stinted by hard times nor panic years. Their broad-minded willingness to absolutely eschew methods which would prove financially profitable, but would at the same time lower the standard of the journal, is worthy of respect and consideration on the part of the medical profession.

He wishes also to refer to Dr. W. P. Watson, with whom association for four years was of a most cordial nature. To him the department of pediatrics owes much for establishing, and for years maintaining an able and dignified special journal, during much of the time at financial loss to himself.

He wishes, farther, to express his appreciation of the work of Messrs. A. G. Sherwood & Co., whose mastery of the printer's art has done so much to make the ARCHIVES the clean and beautiful publication that it is, and to thank them for never-failing patience and courtesy.

It is with keenest regret that he lays aside editorial work, which has always been congenial and has been rendered doubly so by the sincerely cordial relations which have ever existed between him and all his associates—publisher, printer, and contributors.

General and Local Bloodletting in Children.—Baginsky (*Berliner klinische Wochenschrift*) states that there are only two conditions in childhood in which local bloodletting is indicated, and these are simple convulsions and uremic convulsions. When simple convulsions do not yield to ordinary remedies—warm baths, bromides, chloral, ice, chloroform—local bloodletting may be employed. Baginsky states that he feels justified in recommending this treatment, since he has repeatedly found in fatal cases of this kind marked cerebral congestion. In uremic convulsions local bleeding is especially indicated, on account of the high arterial pressure and the toxic and hydremic condition of the blood. In uremic eclampsia leeches to the head are often productive of strikingly beneficial results. General bloodletting he has found useful in croupous pneumonia attended by marked dyspnœa and cyanosis, and in heart disease when suffocative asthma and cyanosis are present. The writer reports a case of lobular pneumonia in a girl of seven years, who was cyanotic and pulseless, in whom he opened the left radial artery and abstracted eighty cubic centimetres of blood. The patient subsequently made a complete recovery.—*University Medical Magazine.*

Bibliography.

Diseases of Children. A Manual for Students and Practitioners. By George M. Tuttle, M.D., *Attending Physician to St. Luke's Hospital, Martha Parsons' Hospital for Children, and Bethesda Foundling Asylum, St. Louis.* Series edited by Bern. B. Gallaudet, M.D. Illustrated with five plates in colors and monochrome. Philadelphia: Lea Brothers & Company, 1899. Pp. 386. Price, $1.50.

This is an admirable book. Viewed as a manual or short treatise upon pediatrics, it leaves very little to be desired and offers but little ground for adverse criticism. It is well written, well printed, and well bound. The author has certainly a marked talent for concise expression. He has written clearly and to the point, has avoided padding and unnecessary references and discussions. The book differs from most manuals and short text-books in that it is not made up of quotations loosely hitched together. While the author disclaims an attempt at originality and acknowledges that he has made free reference to the standard text-books, particularly that of Holt, he has not simply abstracted those books. He has written a new book, and in that sense, his book is original, and as such is to be commended. He has well accomplished his purpose of presenting the subject of pediatrics in a systematic, concise, and orderly form. The work is a credit both to author and publisher. It would be easy to find flaws and to make criticisms of a minor nature. We have not infrequently criticised the making of short and incomplete works for students' use. Had all such works been as well done as this, however, criticism would have been largely disarmed.

Illustrated Skin Diseases. An Illustrated Atlas and Text Book, with Special Reference to Modern Diagnosis and the Most Approved Methods of Treatment. By William S. Gottheil, M.D., *Professor of Skin and Venereal Diseases at the New York School of Clinical Medicine; formerly Lecturer on Dermatology in the New York Polyclinic; Consulting Dermatologist to the Orphan Asylum of the Sheltering Guardian Society; Dermatologist to Lebanon Hospital, the Northwestern, and West Side German Dispensaries.* Portfolios 7-13. Pp. 424. New York: E. B. Treat & Company. Price complete in half Morocco, $15.00.

We had occasion to review the first portfolios of this admirable work as they were published. The last of them have maintained fully the standard set by the first. Although the

first portions of the work contained more reference to the diseases of the skin peculiar to children, the latter portions by no means neglect them. The work is in fact very liberal in the space devoted to the skin diseases of early life. The sections which merit particular attention in the last portfolios are those upon urticaria, favus, nævus, and erythema multiforme. The colored photographs are most of them admirable pieces of work. Colored plates of skin diseases have heretofore been either chromo-lithographs, which must necessarily be more or less crude, or photographs colored by an anatomical artist. The latter method was the most perfect hitherto devised for this purpose. The plates, however, were liable to vary, owing to the individuality of the artist or his changing moods. Owing to the great improvements that have recently been made, we have in the present work for the first time a considerable collection of color-photographs. These plates are unvarying, and form a series of illustrations of great perfection. The plates in black and white in the body of the text are perfect in their way, and leave nothing to be desired.

Adenoids as an Etiological Factor in Orthopedic Deformities.—Several cases of beginning deformities have recently presented themselves to F. S. Coolidge, Chicago (*Medicine*), in which it was at once evident that either adenoid vegetations were present or else, although outgrown, had left behind them the mouth-breathing habit and the usual facial deformity of mouth-breathers. None of the seven cases reported was of simple definite type with fixed and well-known causes, as deformity following cerebral or spinal paralysis, or as congenital club-foot, but all were of the complex type often roughly referred to as possibly from some nerve-irritation. Several theories are brought forward to the effect that adenoids may have some connection with orthopedic deformities, the most important being that adenoids may cause such a lowering of the general nervous vitality that they may be considered almost the direct cause of some of the atypical orthopedic deformities. From the results of adenoids as listed by L. Browne, the writer believes that the bridge from such manifestations to those expressed by such deformities as are described in the paper must be a short one.—*Medico-Surgical Bulletin.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, October 12, 1899.

HENRY KOPLIK, M.D., CHAIRMAN.

BRAIN TUMOR: INTERNAL CHRONIC HYDROCEPHALUS.

DR. HENRY HEIMAN presented these cases. The first was a girl of about seven years whose history presented nothing definite save a gradual optic atrophy that had developed quite early in life. The other patient was a boy of nine years.

DR. J. J. WOLF, who spoke concerning the examination of the eyes, said that there was an internal deviation of the right eye; narrowness of both pupils; complete absence of outward rotation on the left side. Both eyes exhibited choked disk and marked diminution of vision in both eyes, worse in the left.

DR. ALFRED WIENER said that these cases of internal chronic hydrocephalus were not very rare. Optic atrophy was usually the first symptom. In the treatment, the most encouraging results had followed upon the use of mercurial inunctions. He would advise a trephining operation to save the child from blindness.

A CASE OF SCURVY.

DR. WALTER LESTER CARR reported a case of scurvy occurring in a girl of twelve months. The child had been nursed only a short time, and had then been given proprietary foods. The mother thought the baby had rheumatism, but examination showed that the swelling over the lower third of the left thigh did not involve the joint. There were also swelling and tenderness over the malleoli. The skin was hemorrhagic, and the mucous membrane of the mouth was dark but presented no hemorrhages. Within a very few days after the little one had been placed on beef juice, milk and orange juice, it was able to move around, and made a rapid recovery without medication.

DR. S. S. JONES said that he had seen during the summer a baby of nine months suffering from scurvy, in whom the apparent paresis had been quite marked. There had not been much improvement in this case until orange juice, as well as beef juice, had been added to the dietary.

Dr. A. Jacobi spoke of two cases of scurvy in which hematuria had been the only symptom of the disease. It was not uncommon he said, to confound scurvy with either acute poliomyelitis or with acute rheumatism, yet it was easy to distinguish between paralysis and immobility arising from pain, and it could be differentiated from rheumatism by the fact that there was no effusion into the joints.

Dr. Heiman remarked that the blood in scurvy showed evidences of a distinctively progressive pernicious anæmia.

Dr. Herman Besser said that he had recently seen a child who had been thought to be suffering from stone in the bladder because of hematuria, but he had detected evidences of scorbutus, and under a diet of milk and beef juice the child had recovered in an exceedingly short time.

Dr. Koplik thought that whenever a child came to a physician with a painful swelling of the limbs, scurvy should be borne in mind.

ANTIPYRESIS IN THE FEBRILE DISORDERS OF INFANCY. ANTIPYRETIC DRUGS; THEIR USE AND ABUSE IN THE TREATMENT OF FEVER.

Dr. A. Jacobi presented this paper. He said that the antipyretic drugs in common use acted either on the cells of the tissues, or upon the heat regulating centres, and that heat elimination was often increased through the hyperæmia and perspiration induced by their action. Objection had been made to all this class of drugs on the ground that, in the infectious diseases at least, they interfered with recovery by reducing the temperature which was necessary to the formation of the antitoxins, but it should not be forgotton that typhoid bacilli outlive their toxin and possibly also their antitoxin. The danger from hyperpyrexia was not indicated solely by the state of the pulse, or by the condition of the cerebrum. A temperature which might be dangerous to one person would be of little consequence in another, or a temperature that could be safely endured in the beginning of an illness might be most pernicious later on in the same disease. Fever was not an entity but a symptom—the number of degrees of temperature was not the only important feature of a morbid process. It should be constantly borne in mind that protracted fever seriously interfered with the general nutrition, and that this was the more serious in proportion to the youth of the person; hence the necessity for keeping it

within proper bounds. Prolonged high temperature would lead to a state of chronic anæmia and of starvation, and the younger the animal or person the sooner would it succumb to starvation.

QUININE.—Regarding quinine the speaker stated that it had but little influence on the growth or vitality of bacteria, but it diminished the number of circulating leucocytes. In fair doses quinine was certainly an antipyretic, not only in typical malaria, but in many diseases of a remittent type, such as typhoid fever or pneumonia characterized by marked remissions. In malaria it was best given three or four hours before the expected paroxysm. The neutral tannate, given in sufficiently large doses, answered very well for children because of its palatability, but most physicians would prefer the sulphate, administered with syrups of coffee, chocolate, or elixir adjuvans. When given in this way it would not do for the quinine to remain long in contact with the flavoring vehicle, for portions of it would then be dissolved, causing the mixture to be disagreeably bitter. Many children could be readily persuaded to take the sulphate of quinine if it were mixed with a considerable quantity of chocolate. In cases of chronic malaria characterized by decided tumefaction of the spleen, better results would follow from combining the quinine with ergot, as he had frequently observed during the past forty years.

SALICYLIC ACID.—This drug was both irritant and antiseptic, and was a powerful nerve sedative. This acid, or the less irritating sodium salicylate, was indicated in cases of pyæmic fever, and was preferably combined with quinine.

ANTIPYRIN.—Of this drug Dr. Jacobi spoke very highly as an antipyretic. He said that it was moderately anæsthetic and decidedly styptic, and was decidedly irritating when introduced into the subcutaneous tissue. It quickly reduced the temperature, and, except when given for its analgesic effect, required to be repeated after an interval of about two hours.

ACETANILID.—The poisonous nature of acetanilid, and the manner in which it decomposed the hemoglobin were dwelt upon. This explained the cyanosis so often noted in connection with its use.

PHENACETIN.—Phenacetin was milder than acetanilid, though similar to it in its action.

Alcohol.—Regarding alcohol he said that he was not one of those who withheld it altogether from his patients, and it was exceedingly well borne by fever cases. In septic cases the doses tolerated and required might seem excessive, but it would be found in such a disease—for example, grave diphtheria—that as soon as convalesence begun these large doses were no longer tolerated by the system. To secure an antipyretic effect large doses of alcohol were required. While useful in septic affections it should have no place in the early stage of an ordinary pneumonia; it should certainly not be given here for its antipyretic action, for about 4 per cent. of the alcohol ingested was eliminated through the lungs, and when these organs were inflamed it was assuredly not prudent to throw upon them this additional burden. One advantage which this remedy possessed was the rapidity with which it was absorbed from the stomach.

Pathogenesis of Chorea. — Maragliano (*Centralblatt für innerer Medicin, Medical and Surgical Review of Reviews*), believes that it is now proved that acute articular rheumatism is an infective disease, caused by a variety of micro-organisms, especially the streptococcus and the staphylococcus, or both together. Considering the close relationship which exists between rheumatism and chorea, it is probable *a priori* that they have the same etiology, and further research has now confirmed this. The writer in 1891 cultivated a particularly virulent staphylococcus aureus from the nervous system of a child who had died of rheumatic chorea, and soon afterwards Pianese obtained a bacillus, probably the bacillus coli, and a coccus from a case. Since then Meyer, among others, has demonstrated the staphylococcus microscopically in the nervous system, and culturally in every other organ, and Hoctrovi has found the same organism in the blood of a choreic boy during life. Chorea is, therefore, like rheumatism, an infective disease, caused in more than half the cases by the staphylococcus, in the remainder by other organisms such as diplococci and bacilli.—*University Medical Magazine.*

Current Literature.

MEDICINE.

Haushalter: Ninety-four Cases of Tuberculosis in Children, with Autopsies. (*Archives de Médecine des Enfants.* Vol. i., No. 8.)

Among 261 autopsies made on children from a few months to twelve years of age, 94 were upon tuberculous subjects. Of these, 5 were under six months old, and 12 between six and twelve months. The percentage of deaths from tuberculosis is low during the first months of life, and increases gradually until the seventh year, when the maximum is reached. It is usually a generalized tuberculosis, the lungs and bronchial lymph nodes being most often affected, the intestines and mesenteric nodes but rarely. This shows that infection almost always takes places through the respiratory tract. The liver, spleen, and meninges were affected in about half the cases. The endocardium and the larynx were each involved once.

In eight cases there was a tuberculous process localized in one organ—seven in the lung and one in the liver. Eleven cases involved two sets of organs—the lungs with the intestines, skin, or vertebræ. General miliary tuberculosis usually follows infection from an older lesion, most often in the bronchial lymph nodes. Healed tuberculous lesions were found in a number of cases.

The tuberculosis was the direct cause of death in sixty-three cases, while an intercurrent, acute infection caused death in twenty-four.

Danlos: Unrecognized Syphilis in an Infant; Infection of the Nurse; Multiple Chancres of the Breasts. (*Gazette des Maladies Infantiles.* Vol. i., No. 7.)

A healthy woman became wet-nurse to a premature infant eight days old, apparently well. Within three weeks the child showed all the symptoms of a severe congenital syphilis, and died a week later. Eight days after the baby's death the nurse had one chancre on the left breast and twenty-one ulcerating sores, indurated and round, on the right. In the right axilla the lymph nodes were indolently enlarged. The mouth and genitals were normal, and the woman never had any generalized eruption, but severe headaches at night and malaise. While chancres of the breast are usually multiple, it is rare to find them so numerous as in this case. The parents of the baby denied all history of syphilis, but the lesions in both child and nurse were unmistakable.

Hrdlicka, Ales: Differences in Children According to their Nationalities.—*Monograph on Anthropology*, 1899.

According to the author's observations the American children, notwithstanding the many physically inferior individuals among them, occupied the highest average position. Only next to them were the Irish, and the Germans followed very closely. The Russian Jews and the Syrians were physically the most inferior of the children.

Among the few single remarkable facts are (*a*) the unevenness of the relations of the weight and force of the children of the different nationalities; (*b*) the disproportion between the circumference of the head and the width of the forehead in Irish children; (*c*) a disproportion in the same figures, but of opposite nature with the Russian Jews; (*d*) the highest weight with a second-class height and a fourth-class force in the Germans; (*e*) the height of the head in the Syrians.

According to the preceding figures the American and the Irish children are the tallest; the Germans are the heaviest: the Americans are the most powerful; the Irish children have the largest circumference of the head, but at the same time the smallest width of the forehead, while the forehead is widest in the Russian Jews and the Italians; in the height of the head the first place belongs to the Syrians.

SURGERY.

Glautenay: Sub-Hepatic Appendicitis. (*La Presse Médicale*. 1899. No. 2.)

An eleven year old boy, of excellent previous history, had an attack of appendicitis from which he partially recovered. Within three months, however, all the symptoms recurred in an aggravated form. The right iliac fossa was not more sensitive than the rest of the abdomen, the greatest pain and dulness being found on the right side below the liver, on a level with the umbilicus. At the operation the cæcum was found to lie just beneath the liver, in contact with the gall bladder; the appendix was long, thickened, empty of foreign bodies, and showed three small spots of gangrene which had not yet perforated. A large pus cavity existed behind the intestine and in front of the kidney. The child recovered perfectly.

The clinical symptoms of these very rare cases of sub-hepatic appendicitis are due to an error in development, by which the cæcum fails to assume its proper position because of an anomaly in the peritoneal fold which passes over, but not around it, as it should normally do. This also explains the fact that the pus cavity developed posteriorly, behind the intestine.

Taylor, H. L.: Specific Necrosis of Shaft of Tibia. (*Pediatrics.* 1899. Vol. viii., No. 6.)

The patient, a girl of nine years, was suffering from a foul ulcer above the right ankle. There was a history of syphilic infection at the age of one year, followed by secondary symptoms. About a year and a half before her visit she had bruised her right shin, and some months after the leg began to pain her, and later became ulcerated at the site of the bruise. As the leg continued to get worse, a sequestrotomy had been performed, and a large sequestrum had been removed from the right tibia. Most of the wound healed within three months, but the lower part remained open. About six weeks before applying, the opening had ulcerated and taken on an unhealthy action.

Examination showed that the child was anæmic, very nervous, and in poor general condition. She was able to walk only on crutches. The right leg just above the ankle was enlarged to twice its natural size, and there was a foul, unhealthy ulcer, three inches wide at its widest part and three and a half inches long. At the bottom of this sore bare bone could easily be felt, but no loose pieces. As the circulation in the foot was good, the patient was encouraged to try the result of local and general treatment. The sore was cleansed with peroxide of hydrogen and dressed with balsam of Peru. Iodoform in ether was applied occasionally. The patient was also put on Gude's peptomangan, and later on mixed treatment. Inside of a day or two the sore was free from odor, and the granulations had begun to take on a healthy action. As the patient improved rapidly, no operative treatment was deemed necessary. The treatment was continued and the patient made an uninterrupted recovery.

Houssay: Two Foreign Bodies in the Trachea. (*Archives de Médicine des Enfants.* Vol. ii., No. 2.)

A rhachitic and hydrocephalic boy, thirty months old, who had expelled lumbricoid worms at ten months of age, was seized with severe dyspnœa after eating prunes. In the absense of any lesion in the throat a diagnosis of foreign body in the trachea was made. Treatment failed to expel the pit, and all the symptoms became worse, death resulting from starvation and exhaustion. A radiograph showed nothing. At the autopsy a lumbricoid worm 20 centimetres long escaped from the trachea as soon as an incision was made, and wedged against the inferior vocal cords was a fragment of prune-pit 7 by 4 millimetres in diameter.

HYGIENE AND THERAPEUTICS.

Hue: Intra-Cerebral Injections of Tetanus Antitoxin Serum. (*Journ. de Clinique et de Thérapeutique Infant.* Vol. vi., No 48.)

A boy of eleven years sustained a compound fracture of the wrist through a fall. Six days afterward symptoms of tetanus appeared. Under chloroform narcosis 6 cubic centimetres of

antitoxin serum were injected into the two frontal lobes of the cerebrum, and also 20 cubic centimetres into the thigh. Death occurred twenty-four hours later; and at the autopsy a cavity as large as a nut was found at the seat of the cerebral injection on the right side, and on the left a small cavity filled with a clot of blood. In discussing this case Drs. Quénu, Reclus and Chaput report equally bad results in cases in which the intra-cerebral injections were used.

Sansom: Insomnia in the Failing Heart of Mitral Insufficiency. (*Phila. Medical Journal.* 1899. Vol. iv., No. 13.)

Agents for producing sleep or calming nervous agitation are of high importance in the treatment of the failing heart of mitral insufficiency. In *Allbutt's System of Medicine* the author asserts that in some cases chloralamid has been useful, as it is always a harmless hypnotic. It may be given in doses of from 20 to 50 grains in wafer sachet or in weak spirituous or acidulated solutions. He prefers a combination of 20 to 30 grains of chloralamid with 30 minims of dilute hydrobromic acid with a drachm of syrup of orange-flowers and an ounce of pure water, administered at bed-time. Another harmless agent is urethane (ethyl carbonate), which is freely soluble in water, the solution having a saline, but by no means unpleasant taste. In doses of from 15 to 20 grains at bed-time he has found it induces a calm, natural sleep, lasting in a case of severe cardiac failure for more than five hours, the patient being manifestly refreshed on waking. Paraldehyd is perhaps a little stronger as a hypnotic. It may be administered in doses of from 30 to 90 minims in diluted syrup or in almond mixture, or in capsules (each containing 40 minims); it has a powerful and unpleasant taste. In a considerable number of cases of manifestly distressful symptoms of dyspnœa and insomnia no agent succeeds so well as morphia. By far the best way of administering it in case of cardiac disease is by hypodermic injection. The first dose should be small—one-sixth or one-fourth of a grain—but this may be increased subsequently to half a grain. Care should be taken that the administration shall not become habitual.

Quinine Amaurosis in a Child.— Dr. Moulton reports a case of quinine blindness in a child of three years. On August 4th and 5th the family physician gave the child ten grains of bisulphate of quinine for malaria; on the 6th, 7th and 8th, twenty grains each day; the 9th, ten grains; on the 10th the child was blind. On the 10th, 11th, ten grains each day. On December, 14th, after the use of strychnine and Fowler's solution, the child was able "to pick up such objects as pencils and even pins from the floor."—*Western Clinical Recorder.*

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